

# Journal

of the

# Royal Naval Medical Service.

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EDITED BY

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AND

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## Editorial.

We can almost use the same words as those in which we began our Editorial just a year ago. Then we were in sorrow at the passing on of Admiral of the Fleet Lord Jellicoe. To-day we sorrow with the Royal Navy as a whole at the departure from amongst us of Admiral of the Fleet Sir John Kelly. We feel our loss the more deeply as he was so recently our Commander-in-Chief. The tributes paid to the memory of Sir John Kelly in London and in Portsmouth were an eloquent expression of the world's opinion of this great sailor and we can only share in this whole-hearted admiration and sorrow.

Of the Journal itself we have little in the way of news. The number of subscribers remains approximately the same, the losses being neutralized by new subscribers. The financial state has not yet been studied but as is usual the balance sheet will be published in our April issue. We have pleasure in observing, that we have received several articles from the more junior officers, some of which we have published. We welcome this indication of their interest in the Journal and hope that their numbers will increase. Once again we thank those of our contemporaries who have allowed us to reprint from their publications, among others *The British Medical Journal*, *St. Mary's Hospital Gazette*, *Guy's Hospital Gazette* and *The Journal of Tropical Medicine and Hygiene*.

In this issue we publish two items from the Medical Society R.N. Hospital Chatham. The first address was given by Mr. C. P. G. Wakeley Consulting Surgeon to the Navy. Unfortunately he lectured without any notes and we are therefore able to give a report of his address only. We should have liked to have had the whole for we feel convinced that he dealt with one of the causes which give rise to that condition of temperamental instability which occurs in the younger ratings. The second address was given by Admiral Sir E. R. G. Evans Commander-in-Chief, The Nore. This we publish. While it appears unlikely that any of us will be called upon to take part in Polar exploration, yet the whole

subject is of lasting interest and the principles indicated in this address, with obvious modification may be extremely useful to serving officers

The Annual Dinner of the Naval Medical Club is to be held on April 11 It is hoped that there will be a record attendance

We call our readers attention to the activities of the Naval Medical Compassionate Fund as reported in our Journal and suggest that those who are subscribers should assist by bringing the Fund to the notice of those who do not subscribe

Under the heading of Notices we insert some details in reference to King Edward VII Convalescent Home for officers at Osborne for the information of those who have not previously known of this establishment

## Original Articles.

### BIOGRAPHICAL MEMOIR OF DR JOHN HARNESS

(Medical Commissioner of H M s Navy)

*From the Naval Chronicle* Vol XXXV 1816

[By Sir Henry Stephen Fitzgerald Commander S Hinchinson RN]

A wise physician skilled our wounds to heal
Is more than armies to the public weal —Pope

The length of service in the British Navy and professional skill of the gentleman whose portrait is prefixed to the present number of the *Naval Chronicle* have entitled to a more durable record than in the fleeting memory of the hundreds whom he has essentially benefited

To heal the wounds of war whether in its literal or metaphorical sense in whatever degree effected is worthy of a lasting monument, as an example stimulative of future operators in this branch of service and to excite a zeal and ardour in their exertions commensurate with the importance of the duties assigned them

The gentleman whose services are to be the theme of our present Memoir was born in London on November 15 1774 but so brief are the documents before us that we are not enabled to say in what part of London or to give any regular account of his family We find that at an early age he was removed to Wattington in Oxfordshire, where he received a liberal education under the Rev Mr Birkhead and we presume the time and attention bestowed on him were compensated by a due proficiency in classical learning the application of which to the profession of physic he commenced under his grandfather John Foote Harness, an eminent medical practitioner and first cousin to Dr Frank Nicholls Professor of Anatomy in the University of Oxford and successor to Sir Hans Sloane, as Physician to King George II

It [illegible] little [illegible] the ordinary [illegible] was [illegible] as Mr Harness was [illegible] his [illegible] books of the Metropolis and [illegible] industry [illegible] have availed himself [illegible] improvement [illegible] that time afforded [illegible] practitioner [illegible] was Dr Saunders who [illegible] took the name of Saunders [illegible] or substitution to [illegible] whose skill the biographer himself was much indebted [illegible] boy Under this gentleman Mr Harness was long a pupil of St [illegible] Hospital

Whether at the same time or subsequent to this course of instruction we are not informed, but Mr Harness was also a dissecting and dressing pupil under Mr Else, lecturer on anatomy and surgery at St Thomas's Hospital and to attain a more correct information of the practical part of the profession, he was entered a pupil to the apothecary of that institution

Such was the judicious plan of Mr Harness's medical education, and as to this advantageous course of instruction he brought an apt and docile mind, imbibing with avidity the precepts of his enlightened and skilful teachers and seeking with unremitted industry opportunities of practical application Mr Harness soon arrived at that degree of professional skill that might give him confidence as a medical practitioner

We have heard it remarked by gentlemen of the faculty that they are not enabled to get their bread until they have no teeth left to eat it How far this assertion may be experimentally true we will not engage to prove There are certainly many reasons why a medical man advanced in years should be preferred and none more conclusive than that as the previous experience of a number of cases is absolutely necessary to a judicious prescription whatever may be the disorder the older practitioner may be reasonably supposed the most skilful adviser, so long as his mental powers are unimpaired by his years On the other hand, it may be as fairly presumed that a younger man of keen observation penetrative judgment retentive memory, and active pursuits in the theory and practice of medicine may also safely and successfully be employed in the restoration of health

Whether it was from any of the many presumed impediments to an early advancement in his profession at home, or that the ordinary afflictions of humanity were too few to render a competent course of practice easily attainable it does not appear that Mr Harness was ever established as a private practitioner But the extraordinary casualties of war or rather its certain consequences presented a ready and ample opening to employment abroad and his determination was finally fixed by the persuasions of Lord Charles Spencer who had at that time a seat at the Admiralty Board and apprehending Mr Harness's very youthful appearance might operate unfavourably to his advancement at home advised him to pass a few years in the medical department either of the Army or Navy His noble friend's influence being more immediately naval Mr Harness

[illegible] to prefer the latter and he was soon [illegible] December 1770 appointed Assistant Surgeon in His Majesty's [illegible] by the late Admiral James Wallis [illegible] Antigua in the West Indies

It was at this memorable epoch when our West India trade was so greatly annoyed by American privateers, and the British Naval Force on that station inadequate to its protection that the treachery of France was so shamefully evinced by permitting the sale of English prizes in their ports and allowing French vessels to accept American commissions, for the purpose of carrying on depredations against the British trade at the same time that the Court of France was professing the most pacific dispositions toward us

It is not our wish to revive old grievances or to reflect harshly on the character of the house of Bourbon, but if there be such a thing as retributive justice here, the aid at that time so dishonourably given to the American revolutionists was in a few years after to be most awfully requited

How nobly contrasted has been the conduct of Great Britain it is unnecessary to state The whole world is witness of the magnanimity with which she has returned it good for evil, and history will hand down the example to future ages, and to her eternal honour

On Mr Harness's arrival at Antigua, he was removed into the Commander-in-Chief's ship the *Portland* with the appointment of Assistant to the Naval Hospital there

In May 1778, Mr Harness was promoted by Admiral Young then Commander-in Chief, at Antigua to the rank of surgeon—a sufficient testimony that his services had been peculiarly satisfactory for he had not then been two years in the Navy The naval warfare from the time of his first entrance into the Service till the close of the war was unremittingly active and there can be little doubt that it afforded together with the climate of his station, frequent and full opportunity to evince his skill and assiduity

We believe Mr Harness remained in the Service during the peace although we are unable to state his appointment, for some time previous to [illegible] 1793 we find him surgeon to the Royal Naval Hospital at Haslar

On the commencement of hostilities against revolutionary France, a fleet was immediately equipped to act in the Mediterranean, under Lord Hood and is most honourable testimonial of the high estimation in which the professional abilities and past services of Mr Harness were held by [illegible] who had the cognizance of merit in the medical department and the [illegible] Hotham afterwards he was appointed Physician to the Fleet

Mr Harness remained on the Mediterranean station, performing the duties of this distinguished appointment, with the same assiduity and skill that had procured it him, maintaining its increased responsibility by a proportionate decree of activity and vigilance, and giving that general satisfaction to all within the circle of his connection which excellence of

[illegible] hospital [illegible]

To this general character of Dr Harness we subjoin the following corroborative testimonies from General O'Hara, Governor of Gibraltar, and His Royal Highness the Duke of York

(Copy)

Gibraltar
20th Feb 1799

My Dear Sir

I have much pleasure in sending you the enclosed extract of a letter I have just received from His Royal Highness the Duke of York, and to assure you I feel much obliged, as well as all the garrison, for the very able and unremitted care and attention you were pleased to shew our sick

I am dear Sir,
Most faithfully your obedient servant
Charles O'Hara

Extract of a letter received from his Royal Highness the Duke of York, dated Horse Guards 7th December 1798 —

"The invalids sent home in the *Weymouth* arrived a few days since at Portsmouth, and his Royal Highness has only to regret their account. It is sincerely to be hoped that the unfortunate disorder which has prevailed in the garrison under your command will be but of short duration, and that the effects of it will not prove so bad as apprehended

His Royal Highness desires you will be pleased to express his thanks to Dr Harness for the ready assistance he has afforded the troops on this occasion"

After six years of arduous service thus performed Dr Harness returned to England, and in January 1800, was appointed by Lord Spencer, a Commissioner of the Sick and Wounded Board. Dr Harness had gone through the labours of four and twenty years with great credit to himself and service to his country, and the appointment was an honourable retreat from labours which shortly must have become additionally weighty from the weight of years

The death of Dr Johnston left the chair of that Board vacant, and on May 4 1802 Dr Harness was appointed by Earl St Vincent to fill it as his successor

The zeal of Dr Harness in his department of service had never been merely local; his views of amelioration and improvement were general and prospective. So far back as the period of his services at Antigua he had frequent opportunities of witnessing the want of a more general diffusion of medical and surgical science in the Naval Service, and it naturally suggested to him the necessity of placing the surgeons of the Navy on a footing that might in future induce men of professional talents to embark and continue in it. From the obscurity of his situation at that time there could be no hope of any effectual attention to his representations had he made any, but in the year 1804 the doctor embraced the opportunity of

evincing his paternal solicitude for the due interests of the surgeons of the Royal Navy, and its service in their department

Some recent regulations had taken place under an Order of Council by which an augmentation of pay to army surgeons was granted and Dr Harness, with a laudable anxiety to see ameliorated the condition of the naval surgeons on September 21 of the same year addressed a letter to the Right Hon Lord Viscount Melville, in their behalf, stating the inadequacy of their pay to the labours of the Service and the relinquishment of their professional prospects at home that this insufficiency acted as a prohibition to the entrance of men of talents into the Navy and that it very materially suffered by such deficiency, and respectfully represented the equal claims of the naval with the military surgeon

A representation so candid and so just was not likely to remain unattended to by such a man as the late Lord Melville who seems to have fully appreciated the value of the British Navy by his readiness on all occasions to advocate its interests, and during his presidency over naval affairs we think it may be truly averred that its real interests were never neglected and promoted with a zeal and activity unprecedented at least since much has since been done the most material grievances undoubtedly redressed there is however still room for the grant of certain minor particulars and accommodations both to men and officers

This appeal from Dr Harness to Lord Melville was in fact successful a few copies of it were distributed to the senior and most respectable naval surgeons and through the medium of a friend of one of these gentlemen, we are enabled to lay before our readers the following copy of it —

Harrow September 24th, 1804

My Lord

In obedience to the commands your Lordship was pleased to honour me with at our last interview I now beg leave to submit for your Lordship's consideration my ideas with respect to the medical establishment of the naval service

It has for some time afforded subject for complaint, and general regret, that although the health of the meritorious individuals engaged in the naval service is universally allowed, should be one of the first objects of solicitude to the country and that while neither expence nor pains are spared to obtain the means of most effectually preserving it few men of talents in experience are to be found to the discharge of the medical duties in His Majesty's ships and hospitals and that of surgeons mates there should be almost a total deficiency so much that at this period, there is not a sufficiency of the former for the ships actually in commission nor above one fourth of the proportion of the latter which the service requires while of the surgeons whom the Sick and Wounded Board would be desirous of selecting on the account of the experience acquired by service in former wars, scarcely any are contented to relinquish the emoluments of private practice for the trifling advantages held out to perseverance in the navy

The origin of this deficiency I believe my Lord, may be traced to the want of sufficient encouragement for professional men to embark and continue in the service

The education required to qualify a man for the duties of a surgeon, necessarily occupies much time, and is attended with proportionate expence yet when he

has attained the necessary degree of knowledge, and served the usual period as surgeon's mate, he must remain five years in actual service as surgeon before he can be entitled to any half pay and then, as the number on the surgeon's list who receive it are limited to 330, as long a period may again elapse before the honour is extended to him thus will be obvious to your Lordship on recollecting that the order in council regulating to present half pay restricts it to twenty, who have served nine years as surgeon the allowance of 5s per day to one hundred who have served seven years 3s and to two hundred who have served five years 2s 6d The consequence is that when a young man, who may have served as surgeon during the course of a war finds himself, on the return of peace without other resources than what he may derive from giving the employment of his talents and industry a new direction, he will naturally engage in private practice as affording the means of present and holding out the prospect of future support and when his services are again required by the Navy it has unfortunately nothing to offer which can be considered equivalent to a sacrifice of the advantages he may have acquired, and in which he can with greater certainty look for the maintenance of a family

It is scarcely necessary for me to remark to your Lordship, that whatever may be a medical man's natural talents and however excellent his education, still experience is more essentially necessary for the acquirements of skill in this than in almost any other profession and it is the more seriously therefore to be lamented that from the causes I have stated experienced men should be in a great measure excluded from the navy

The older surgeons, whom the service still retains, are, unfortunately to be considered for the most part as men who from want of knowledge or ability in their profession, have failed of success in their attempts at private practice, except eg where an independence brought in aid of half pay, has prevented the necessity of resorting to it for support or where they have continued to employ during peace and in some few instances where they have found no opening to private practice, and have been compelled to exist in penury, till an opportunity of again employing them has presented itself to the Sick and Wounded Board

A consideration of the present deficient state of the medical department of the Navy and of the causes to which it is attributable naturally leads to the suggestion of a remedy for the evil and I have no doubt it will occur to your Lordship as it has to me that the most likely mode of succeeding is by presenting inducements to medical men to enter into the naval service and when entered, to preserve their engagements to it by granting them such allowance of half pay as shall be sufficient to maintain them when unemployed and by progressively increasing it in proportion to their length of service

The recent regulations in the medical department of the army under the order in council of May last may perhaps be assumed as the best guide for and augmentation in the allowances to the same department of the navy and I apprehend to any person conversant with the duties of the respective services, it will scarcely suggest itself that the actual labour and attendance on a ship's company is less than with a regiment The difference of numbers must doubtless vary but the sacrifice of time and talents is equal, I believe to a medical man whether devoted to the attendance of 100 men to a sloop, or 500 in a garrison

I have accordingly from a view of the order in council above referred to, prepared for your Lordship's inspection a statement of the allowances which it will be requisite to bring the two services, in point of emolument more nearly on a par presuming that all the perquisites naval surgeons now enjoy and pay and provisions of lourth, fifth and sixth mates, would be applied to defray the expenses of the proposed arrangement

In calling the attention of your Lordship to this subject, I have been as much influenced by a conviction in my own mind of the necessity of some change in the present system on the principle of policy, as a feeling of consideration for the

[redacted]rving as surgeons in the navy whose complaints, with regard [redacted] of the allowances at present established I have daily occasion [redacted]o rely on my submitting them to your Lordship's notice

I am, my lord,
Your Lordship's obedient and devoted servant
J. HARNESS

[redacted] Viscount Melville

[redacted] f the naval surgeons being thus improved an influx of [redacted] it was soon the consequence Candidates for the Service [redacted] by the prospect of a comfortable provision, came forward, desirous [redacted] ppointment, and disposed to retain it It is to the judicious arrangement then formed that the present unparalleled state of the naval medical staff and the consequent efficiency of our Fleets from the health of the crews with the great improvements in naval regulations on board ships are solely to be attributed

In January 1806 the duties of the Sick and Wounded Board were consolidated with those of the Transport Service, and Dr Harness was appointed the sole medical member of that Board This so far as is known by us is the apex of the doctor's advancement

We understand that Dr Harness was conspicuously active in introducing the general use of the citric acid in His Majesty's Fleets as a preventive for the scurvy but let no man be certain that the credit of his actions shall be duly appropriated to him by others In a recent publication On the Health of the Navy, by Sir Gilbert Blane is an historical sketch of the known powers and use of the citric acid in His Majesty's Navy, as a remedy and preventive for the scurvy, and of the circumstances which led to its having been issued by Government as a general supply The very natural expectation of Dr Harness to find the above specific and prominent instance of his professional services in the Navy duly noticed only led to the mortifying disappointment which an illiberal and total silence on the subject must as naturally have produced

We have already given Dr Harness's letter of remonstrance to Sir Gilbert [*see infra*

Dr Harness has been forty years in public service and in every stage [redacted] it has been found zealously attached to his several duties and however the due performance of them may be depreciated by misrepresentation or neglect—were not the evidence of facts incontrovertible as they are, yet there is that in every man as a just arbitral of rewards which will always be superior to the illiberal slights or malevolent attacks of petty jealousy

## THE ISSUE OF CITRIC ACID

In laying before our readers the following letters on a very important subject, we cannot abstain from offering a few remarks The anxiety of Dr Harness on a point so highly honourable to him as the introduction of a system alluded to in these documents—a system which had been the source of so much comfort and we may add of so much glory to the British Navy—is too natural and

commendable to require comment In an age wherein the philosophical applica tion of long known but unappropriated truths to the amelioration of humanity has raised many individuals to eminence this discovery of Dr Harness entitles him to take rank among that number as a distinguished benefactor of his fellow creatures

We cannot, therefore, but join in the regret expressed that Sir G Blane omitted to record in his publication a due testimony of the merits of this most beneficial work To say that lemons, or lemon juice were employed in the Navy a hundred years ago detracts nothing from the services rendered to his country by Dr Harness in 1793 when proceeding on his own experience and generalizing and applying in a manner entirely new the chemical reasoning stated in his letter to Lord Melville he introduced into the Navy that process which has since mainly contributed to the health of the men and effectiveness of their belligerent operations Sailors might suck lemons in 1600—so had milkmaids in dairy countries the cow pock at that area But who goes about to deny Dr Jenner the mighty merit of having discovered that immortal secret which although it lay on the surface was yet so long hid from the eyes of mankind—the practice of vaccination as a preventive of small pox On precisely similar grounds does Doctor Harness stand with respect to the application of citric acid and equally does he deserve the gratitude of his country We proceed to lay his letters before our readers

To Sir Gilbert Blane Bart. M D

'January 18 1916

Sir

'I have perused your pamphlet On the Health of the Navy with considerable interest and great attention and you must allow me to say that it is with no small surprise I perceived that in your Historical Sketch of the known powers and use of the citric acid in his Majesty's navy as a remedy and preventive for the scurvy and of the circumstances which led to its having been issued by government as a general supply —you have entirely omitted to mention that use made of it and with what beneficial effects it was used by myself when I was physician to his Majesty's fleet in the Mediterranean in the year 1793, then under the command of Admiral Lord Hood for the use of which at my express sugges tion a very liberal and general supply was issued and the same system with the same salutary effects was continued under successive commands of Admirals Lord Hotham Sir Hyde Parker and Lord St Vincent I cannot, I say but express my surprise at this remarkable omission because from your official situation at that time, being member of the board of sick and wounded you could not be ignorant of this fact the many bills drawn by the respective commanders on the Commissioners of that board for lemons issued to the crews afforded ample proof of the large use that had been made of this valuable specific, and of your knowledge of that practice Yet you say, That in the year 1600, Commodore Lancaster sailed from England on the 2nd of April with three other ships They arrived in Saldanha Bay on the 1st of August the Commodore's crew being in perfect health from the administration of three table spoons full of lemon juice every morning to each of the men whereas the other ships were so sickly that they were unmanageable for want of hands, and the commander was obliged to send men on board to take in their sails and hoist out their boats

'This question, you say is taken from Purchas's Pilgrim Volume I p 149 a work I have never seen but as you remark is a striking example of the difficulties and delays which obstruct and retard the progress and adoption of practical truth

'In addition Sir, to this certain proof above mentioned of your knowledge of my claim to the introduction to the use of the citric acid into the Fleet permit

me to remind [illegible] that I never can forget that when [illegible] the Mediterranean [illegible] I united upon the Board on which [illegible] member at St [illegible] and the Chairman (Dr Blane) explained [illegible] to me that so great an expense should have been incurred for fruits and vegetables. I replied that when I can supply the fleet would have been not effective. The experiment [illegible] to have been so successfully made in His Majesty's Ship [illegible] the consequence of which upon the report of the medical board the general supply of lemons was issued to the Navy was nearly ten months after lemons had been prescribed by me as physician to the fleet and with what success if other proofs were wanting, may appear from the following certificate of the ventralle Lord Hood, of whose patronage and friendship to have been thought deserving will always be amongst the greatest satisfactions of my life

I do hereby certify that in the summer of 1793 when His Majesty's fleet in the Mediterranean under my command was greatly afflicted with scurvy, Dr John Harness physician to the fleet very strongly recommended to me the use of lemon juice as a cure and preventive of it, in consequence of which, I ordered the respective ships to be constantly supplied with lemons and was happy to find that within six months the disorder was effectually eradicated and the crews of His Majesty's fleet perfectly healthy

Given under my hand at Bath November 3 1815

Hood

When Sir John Jervis now Lord St Vincent in November 1795 succeeded to the command of the fleet finding the ships companies were enabled to keep almost constantly at sea he complimented me by saying that he considered my introduction of the general and liberal supply of lemons to the crews as the greatest thing ever done for the preservation of the health of our seamen And in a letter which in Clark's Life of Lord Nelson, Vol I page 389, we find addressed by Lord St Vincent to the Hon R Walpole the British Minister at Lisbon dated 21st December 1796 he mentions The British Fleet having kept the sea longer than was ever experienced in the Naval History of Europe

I will mention but one testimony more not inferior to any I have yet brought forward That of Lord Nelson who, as appears from Clark's History of His Life Vol I page 211 writes thus to Captain Locke, dated off Minorca June 18 1797 upon the whole we are more comfortable than the Home Fleet and our people are very healthy *The scurvy is not known* And were it not that it might have an air of vanity I could record what that great man said to me, in the warmth of his heart upon this very subject when he took leave of me on going for the last time on his great command

These facts and these testimonies, are strong and cogent and I think it due to myself to recall them to your mind in vindication of that statement I have marked in my printed letter addressed to Lord Melville on the great benefits conferred by His Majesty's fleet from the introduction of the citric acid by me as a preventive of scurvy I shall be acquitted I trust by all who know me I never was to sordid interest, at any period, or under any circumstances of my life that I cannot be indifferent to fair fame while I live or posthumous reputation Therefore it is, that in thus publicly addressing you I make my appeal to facts which I trust you will have the candour to acknowledge to be [illegible] and that the claims which I have made in my pamphlet to the introduction of the use of citric acid into His Majesty's navy having truth [illegible] stands upon a sound and solid foundation

I am Sir Your obedient humble Servant

John Harness M D

*Medical Commissioner of His Majesty's Navy*

A Letter to the Right Hon. Lord Melville First Lord of the Admiralty on the use of Cow Pox in the Royal Navy. By [illegible], M.D. Medical Commissioner of his Majesty's Navy.

My Lord

In addressing your Lordship as the head of the department to which the immediate superintendence of every object connected with the Naval Branch of the Public service has been confided I feel assured that the following observations for I believe it will be generally admitted that few objects are of higher interest to a maritime state than the means of preserving the health of its seamen. From the nature of their diet the necessary confinement and hardships into a confined space and other adventitious circumstances to which, are peculiarly liable to disease and it is painful to contemplate the ravages by which at different periods in our naval history the crews of our ships of war have been wasted as if our most planned enterprises made of no avail by this fatal and ever common cause of failure. In the catalogue of disorders by which our ships have at all times been contested into Hurtful hospitals none was ever more direful in its effects or more extensive in its mischief than the scurvy.

When I first entered the service, in 1776 this dreadful disease was generally prevalent to neglected no diligent attention was early directed to the means of opposing its ravages with effect. I had the opportunity about this time while assistant surgeon in the Naval Hospital at Antigua of remarking the diseases of the inhabitants of the Island and on applying myself on my return to England to the study of Dr. Priestley's and the Hon. Mr. Cavendish's philosophical experiments on air, it occurred to me that the thickening of the ligaments and integuments of the joints of the hands and feet symptoms almost universal among the European inhabitants of the West Indies, and frequently in so great a degree as to produce a perfect anchilosis of these parts were results of a superoxygenated system and originated in their indulgence in the use of lime or lemon juice, with which their common beverage was ever highly acidulated. Contrasting therefore these effects with the opposite symptoms of complaints of a putrescent nature incident to seamen I was led to the inference that their diseases were induced by the respiration of air deprived of its vivifying principle the debilitating effects of which can be vouched by every person who may have visited or inhabited the between decks of a man of war. Every practitioner of observation is aware that the blood of patients confined to the inhalation of air deprived of its proper proportion of oxygen, is of a dark grumous appearance of a quality not possessing the power of imparting the necessary coctivity either to the soft or harder solid parts of our frame and, consequently incapable of affording due nourishment to the general system. Horses with patients labouring under this scorbutic diathesis I have found it necessary in my practice as a naval surgeon to perform a second operation on their limbs the coats of the arteries being nearly in a gelatinous state and incapable of sustaining the pressure of a ligature a fact which although I do not recollect to have seen it noticed by any author who has written on the scurvy must doubtless have frequently occurred to the observation of many naval practitioners besides myself. It became a desideratum therefore to discover the means of counteracting this tendency to putrescency and these from the observations before stated, I had not a doubt would be found in the liberal use of citric acid.

On the breaking out of the late war in 1793 I accompanied my Lord Hood to the Mediterranean as physician to the fleet and scarcely had our operations commenced by the blockade of Toulon before the Scurvy made its appearance and threatened, by its rapid effects on the crew of a newly invested fleet, to compel the abandonment of this important measure. At this juncture I had the opportunity of ascertaining practically the advantage of my theory. Lemons

[illegible] promptly issued [illegible] supplies of the fleet, and [illegible] e, which had been [illegible] much just alarm at once [illegible] was in the summer [illegible] The issue of lemon juice [illegible] the desired result [illegible] period became progressively [illegible] the men [illegible] duly supplied, by the sick and [illegible] all ships. Of this Board I was appointed a Commissioner [illegible] and [illegible] the superintendance of the Medical Department was [illegible] In May 1806 the Transport Board I had the honour to receive the appointment of Medical Commissioner. Towards the close of that and early in the following year the expedition was preparing under General Whitelocke against South America. Influenced by the conviction that the system which was operating with so much success in the Navy, might be extended to those troops with an equal beneficial result I suggested to the Board of which I was now a member that an adequate quantity of lemon juice and sugar should be supplied to the transports to admit of the soldiers obtaining a daily allowance during the long voyage they were about to proceed. My suggestion was adopted and instructions were given that the issue of these articles should commence in three weeks from the sailing of the transports. When the length of the voyage and the number of men embarked, exceeding ten thousand are taken into consideration, and the state of almost perfect health to which they were disembarked being, with a few unfit for immediate service; the effects of the administration of citric acid will appear in a striking point of view. But perhaps there is not any one circumstance which so strongly evinces the benefit of the system as the rapid disappearance of scurvy in the few instances in which the issue of lemon juice has [illegible] any cause been omitted.

Thus in the year 1807 when from an erroneous impression that the use of it was unnecessary when fresh meat could be obtained, some of his Majesty's ships did not receive the usual allowance the result of the omission was a collapsed state of the vessels paleness of countenance, progressive emaciation and general debility of the crews. Recently, too on the American station the occasional want of a regular supply was attended with equal serious consequences to the health of the fleet until a sufficient quantity for the use of the ships companies was obtained.

The gradual diminution of disease in the Navy, as the necessary consequence of the use of lemon juice, added unquestionably by a generally improved system of treatment is manifested by a statement which I now take from official returns of the number of seamen discharged to the hospital at different and equal periods of the sailing 1783, 1798 1805 and 1810.

The result is more satisfactory and establishes beyond a doubt that our [illegible] companies are become more healthy than the same number of men would [illegible] short and unavailing, on this important fact let it be remembered that [illegible] evidence before the House of Commons that in the seven years war [illegible] 1762 no less a number of seamen than 130 000 had died of disease [illegible] that the complaints of two thirds of these arose from putrescency whereas [illegible] may be said to exist only in the painful recollections of those [illegible] witnesses of its fatal devastation. It is not too much therefore, to assert that by the introduction of a system to which, I trust it is not presumptuous to assert I have been mainly instrumental thousands of valuable lives and an incalculable expense of money, have been saved to the country and [illegible] to the success which has made our Naval power paramount has in a great measure depended on the ability of our fleets to keep the sea for a length of time which was heretofore considered as impossible, the measures by which this has been rendered practicable assume a character of even higher importance than that derived simply with reference to the value of the lives which [illegible] to the State.

[illegible] showing the number of seamen and marines annually voted by

[illegible] and equipments of [illegible] hospital [illegible] stations during those periods

| | Number of Sick and Wounded | |
|---|---|---|
| | Victualled | Victualled |
| [illegible] | 0,000 | [illegible] |
| [illegible] | 85,000 | [illegible] |
| [illegible] | 10,000 | [illegible] |
| [illegible] | 100,000 | [illegible] |
| [illegible] | 11,000 | [illegible] |
| | 456,000 | [illegible] |
| [illegible] | 8,000 | [illegible] |
| [illegible] | 100,000 | [illegible] |
| [illegible] | [illegible] | [illegible] |
| [illegible] | 110,000 | [illegible] |
| [illegible] | [illegible] | [illegible] |
| [illegible] | 130,000 | [illegible] |
| | [illegible] | [illegible] |
| 1799 | [illegible] | [illegible] |
| 1800 | [illegible] | [illegible] |
| 1801 | [illegible] | [illegible] |
| 1804 | [illegible] | [illegible] |
| 1805 | [illegible] | [illegible] |
| | [illegible] | [illegible] |
| 1806 | 120,000 | [illegible] |
| 1807 | 140,000 | 635 |
| 1808 | 130,000 | 630 |
| 1809 | 130,000 | 371 |
| 1810 | 145,000 | 9,965 |
| | [illegible] | 30,69[illegible] |

I must take the liberty to Lord that in pressing this subject [illegible] ships [illegible] I have not the least wish to make known the part I have taken in introducing [illegible] of which the benefits have been so many and so important Whether I deserve the encomiums to which the reward of my country [illegible] of course for me to anticipate But I cannot in any case forego that recollection which I most highly prize the consciousness of having been a chief instrument under Providence in rescuing numbers of the most useful members of the State from the effects of a disease [illegible] which the ravages were heretofore so extensively fatal

I have the honour to be &c &c &c

Your Lordships most obedient humble servant

JOHN HARNESS M D

*Medical Commissioner of His Majesty's Navy*

The following extracts of official correspondence with Lord Hawkesbury prove most satisfactorily what Dr Harness has asserted in his letter on this subject published by Lord Melville

Lord Grenville directed the Lords of the Admiralty having appointed a distant Command [illegible] the Sick and Wounded Board on December 1 1793

On the 16th December 1793 the Commissioners of the sick and wounded recommended to the Lords of the Admiralty the putting a few sheets of lemons or a quantity of lemon juice prepared for keeping on board the ships of the squadron as an antiscorbutic for the use of the ships companies And wrote on the same day to Lord Hawkesbury to inform him that they had submitted his request to the consideration of the Lords Commissioners of the Admiralty

[illegible] on the 23rd of December 1801 the Commissioners informed [illegible] their Lordships approval of the supply, and request to be informed [illegible] of men that would be under his command

[illegible] above, his Lordship replied on the following day, concluding his [illegible] with the following remarkable observation —

I am of opinion if upon trial lemon juice and sugar should be found to answer the good purposes intended and it should become an article of seamen's diet, that the Victualling Board will be directed in future to provide an additional quantity of sugar for the purpose which you have recommended

This supply of lemon juice was prepared but Lord Gardner not going out as was intended it was in April 1794 sent on board his Majesty's ship *Suffolk* as an experiment (as described by Dr Blane) with directions to the surgeon to report its efficacy

This was two months after lemons had been prescribed by Dr Harness, to the Mediterranean fleet so that there can be no question of priority in this case and Dr Harness must remain in possession of the merit which he has publicly earned in consequence of the extraordinary omission in Sir G Blane's publication

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## HOW THE SAILOR LOOKS AT THE SURGEON AND THE MEDICAL ASPECT OF POLAR EXPLORATION FROM A SAILOR-EXPLORER'S VIEWPOINT[1]

By Admiral Sir E R G Evans K C B D S O
*Commander in Chief The Nore*

Robert Louis Stevenson dedicated his book of poems in reality to [illegible] doctors and surgeons who brought him comfort and help

He says that soldiers, sailors shepherds and physicians stand above the common herd, and he says, speaking of the physician (and that includes the surgeon and the profession generally) —

> He is the flower of our civilization, and when the stage of man is done with and only remembered to be marvelled at in history, he will be thought to have shared as little as any in the defects of the period and most notably exhibited the virtues of the race Generosity he has such as is possible to those who practise an art never to those who drive a trade, discretion, tested by a hundred secrets, tact tried in a thousand embarrassments, and what are more important [illegible] cheerfulness and courage So it is that he brings air and cheer to the sick room and often enough though not so often as he wishes, brings healing

So here it is, my preamble in better words than I could frame Stevenson's own appreciation—that of a long suffering patient—of heartfelt gratitude to the medical profession

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[1] Being an address delivered at R N Hospital Chatham on November 4 1931 to the Medical Officers of the Fleet

A[illegible] for all of [illegible] time has been spent giving [illegible] gives—[illegible] of his life—for the country of [illegible] have [illegible] contact with suffering and with [illegible]

[illegible] which science knowledge and courage have [illegible] and I have numbered many of them among my friends

[illegible] their tireless and unflinching devotion to duty, have inspired [illegible] nerve ridden days of meaningless hustle can find time to [illegible]

When as a very young sailor I started exploring it was the surgeon and the Thirty Shilling Specialist who selected my literature for me to take on those long [illegible] voyages Sir Lecthal Cheatle and his brother Arthur knew that Dickens good books, would be brain food for the mental starvation that I should have to face—and they stocked my diminutive cabin with pocket classics which were like lifeless thrown to us sailor explorers in our tiny blubber-saturated whaler the *Terra Nova* when we were in danger of drowning in a sea of boredom

Sir Alfred Fripp the surgeon and incidentally the King of the Froth blowers was also my friend I once visited him and his family with a party of sailors who invaded his seaside cottage at Ilfworth Cove He was suffering from sciatica at the time and a lady of title was staying with him She was reputed to have a silver plate in her stomach—and I said to Fripp I didn't know you were Lady A's surgeon Mesher surgeon? he replied, "She doesn't have a surgeon When she has anything wrong with her she merely calls in a plumber!

We sailors thank God and the profession that we have got past the days of elementary surgery—of the days when the ship's captain when he had to amputate a leg, took 'The Seamen's Medical Guide and then read a little bit and sawed a little bit and then read a bit more, and sawed a bit more until finally the leg came off when he had to give the patient a stiff dose of brandy while he read again how to complete the job

When I was a Midshipman I stayed with an ancient mariner who had been out down from behind by a Japanese with whom he had had a severe difference of opinion The old chap showed me a deep gash in his back where a sword had cut him pretty well from North East to South West He had crawled into the house of a paper merchant who had sent for a doctor who didn't know his language, and this man he said put 37 stitches in when sewing up the wound To enable him to withstand the pain, the doctor gave him a good gulp of brandy When he had finished, this Japanese doctor took the bottle and drank right down to the word "Cognac" said old Ring, my sailor friend, was so amused that he burst out laughing and broke away many of the stitches

However the miracles that you surgeons work owing to modern anæsthetics, have done away with that sort of surgery and made the sailor

look with wonder and admiration at the surgeon. It might interest you to know that I have often walked past Lord Lister's old house near Harley Street where there is an inscription to the effect that the great surgeon lived there. The brothers Cheatle taught me by their own example to raise my hat when I pass the home of this friend of humanity.

Sometimes even the sailor has a chance to show gratitude to the profession and I was able, before the younger Cheatle died, to take him on one of my long fishery cruises to Iceland, where he was able to get that true peace of mind that a man overworked, worn, and tired from long service to his fellow creatures, can best obtain by trout and salmon fishing. The cruise did him no end of good and it brought me in contact with another great surgeon, Sir William Watson Cheyne, in rocky Fetlar in the Shetland Islands where he had been appointed Lord Lieutenant after his retirement. We held quite a medical congress there, and my own little Irish surgeon did much to cheer things up.

In our own great Naval service, the surgeon must have a sense of humour to compete with the sailor because old customs die hard and the god Routine will embarrass him if he lets it.

In bygone days we had great difficulty in attracting surgeons to the Navy. However, things have changed now and we have made the Navy attractive enough to get good doctors.

And what is more, we older sailors have not only their professional knowledge at our disposal, but we have their counsel and their friendship, which allows the admirals and captains to get the best service out of their subordinates, thanks to physical fitness.

Not very long ago I asked an Australian sailor how he looked at the surgeon. His reply came out pat: "Oh I think he is a man to be avoided." Continuing the subject I found that this fellow Empire citizen had a very fine appreciation of the medical profession in general. I read out of Gregory Mallory's article on "Aggression" in the *Atlantic Monthly* the following: "Medicine occupies a singular position in the scheme of human relations—of all fields and aspects of human endeavour medicine alone does not concern itself with the judgment of man's behaviour and his ethical motives. Medicine studies and tries to heal the wound of a sailor or a thief, the fever of a king or a burglar, the delirium of a great teacher or a scoundrel—all are equally to be studied, combated and healed. The doctor reaches this point of detachment not because he is a superman nor because he is made of different stuff than any other human, but because his social function is that of a healer and not of a servant of any social, religious political or philosophical creed. As long as this function is fulfilled, his conscience is clear regardless of his social and ethical allegiances. The blinding passions involved in such problems as "Jew or Aryan" "Communist or Capitalist," "Italian or Ethiopian," may very well occur in the doctor's province as an individual but they are outside his actual lifework. Society understands this and judges the doctor in the light of

this understanding Should a teacher, philosopher or economist go to Moscow to advise Stalin, he is likely to be judged or suspected of being a Communist should a doctor go on a mission of health to Tokio Moscow, or Berlin no one would suspect him of being an Imperialist, Communist, or Nazi My sailor agreed for like most sailors in his heart he regards the surgeon with great respect and admiration

The surgeon no doubt looks at life as but a brief span between two eternities and he endeavours to prolong it for us while the sailor looks at death as being but a single beat in the rhythm of eternity, but he endeavours to avoid it

I cannot conclude my address to you without referring to one other of your profession whose name is a revered memory I refer to the late Dr Edward Wilson, Chief of the Scientific Staff and Zoologist in Scott's last expedition

His knowledge of food values enabled us to get the best possible sledging rations for that long eighteen hundred mile sledge journey to the South Pole and back

His artistic sketches helped to illustrate Scott's own glorious story His character influence resourcefulness and self sacrificing devotion made him Scott's close friend and personal adviser in that expedition which the world has learned to know so well We used to call him Uncle Bill. He was also known as the "Peacemaker" and thanks to the qualities and character formed during his long Antarctic and medical experience we younger ones disciplined ourselves and thanks mainly to his example there was never a quarrel nor an angry outburst in those three lonely years which we spent in the Great White South

Captain Scott, writing of him to his widow, says:—

"My Dear Mrs Wilson,

If this reaches you Bill and I will have gone out together We are very near it now and I should like you to know how splendid he was at the end—everlastingly cheerful and ready to sacrifice himself for others never a word of blame to me for leading him into this mess He is not suffering, luckily at least only minor discomforts

'His eyes have a comfortable blue look of hope and his mind is peaceful with the satisfaction of his faith in regarding himself as part of the great scheme of the Almighty I can do no more to comfort you than to tell you that he died as he lived a brave, true man—the best of comrades and the staunchest of friends

"My whole heart goes out to you in pity

'Yours

R SCOTT

I started my address with the remarks of a poet, a great poet, about the physician I have concluded it with the remarks of a great sailor explorer concerning one of your profession

B

[illegible] might add some lines of Stevenson's lines —

> Far from the loud sea beaches
> Where he goes fishing and eats fish
> Under the inland gardens
> Why does the seagull flying?

and substitute sailor for seagull, and say that Scott and Admiral Pickering Pick has asked me here because he probably realizes that I do know something of the surgeon and his work, his character and what he means to humanity and to the sailor

## THE MEDICAL ASPECT OF POLAR EXPLORATION FROM A SAILOR EXPLORER'S VIEWPOINT

For a simple sailor and a layman like myself to address you on the subject of the medical aspects of Polar exploration needs courage but just as the Naval Officer is prepared to listen to and glean information from his fellow brother the fisherman so perhaps may I draw on my experience and knowledge of the polar regions for your edification

I propose to group my talk under the following subheads —

(1) Selection of personnel
(2) Provisions
(3) Clothing
(4) Medical comforts and supplies
(5) Hygiene
(6) Polar afflictions
(7) Recreations and keeping fit
(8) Care of the body
(9) Climatic effects
10) Fauna
(11) General

### Selection of Personnel

The choice of members for a Polar expedition is one in which the medical officer's help is most valuable As indicated my late leader was particularly fortunate in having Dr Wilson to advise him, particularly as he was Scott's close personal friend and had great experience in Antarctic exploration

#### *Age*

From 27 to 35 appears to be the best all round age for those who are to play important parts The leader's age might be extended Scott was 34 when he commanded the *Discovery* expedition so successfully, and 43 on his last expedition

Shackleton, Mawson Nansen and Byrd were all young men—between 32 and 40—when in command of their most successful ventures Peary was 53 when he reached the North Pole Sir John Franklin was as old as 61 when he lost his life in the frozen north Amundsen the first man to reach the South Pole, was 39 then and 54 when he reached the North

Pole by an Charcot [illegible] French explorer drowned on [illegible] Test [illegible] in enterprise was nearly 70

Concerning the younger men it is generally accepted that for good rough wear and tear, withstanding cold and looking after themselves—a *vital* factor—it is a mistake to take men much under 25 on long sledge journeys although in the ships youngsters of 20 stand the rough and tumble very well, with a doctor under their ice and older men in charge of the ship

*Temperament*

Temperament has to be considered Temperamental folk do not stand the long winter darkness or the close cooping up well I should think the Englishman (and I do not mean Irish or Welsh) and Nordic races come out best in the long run

*Medical Histories*

In making his selection from nearly 8000 volunteers medical histories were looked carefully into by Dr Wilson and two Naval Surgeons, Levick and Atkinson both of whom accompanied the expedition Eyesight teeth, heart, lungs and general physical development were of an exacting standard in Scott's Mawson's Shackleton's Byrd's and Amundsen's Expeditions, although there were notable exceptions even in these For instance, Dr Wilson had a tendency to pulmonary weakness, but his other outstanding qualities and his magnificent character decided Scott to take him on his first expedition which actually enriched his physique and built him up enormously, for the Polar regions are really healthy if one is properly looked after

PROVISIONS

Generally speaking, these can be divided into three categories Provisions for use in the ship, provisions in use at the main base, and sledging rations (or in more modern times flying rations)

We can dismiss the first one by saying that the ordinary stores carried by a ship bound on a long voyage suffice In most modern expeditions an ice house or insulated cool chamber is built and a hundred or so carcasses of mutton a leavening of beef, veal, suet &c, are carried

Scott took 100 carcasses of mutton, three carcasses of beef, stowed in tiers with wooden battens between the tiers and three tons of ice which sufficed to feed the whole of the expedition outward to the Antarctic and enabled him to land 100 carcasses of mutton which we stowed in an ice cave

Potatoes onions cabbages lemons oranges apples, &c, were taken to start with and, of these, I think onions came out on top They lasted best

In the modern expedition you can get bread, butter, the best of tinned meats, eggs powdered milk condensed, evaporated, and malted milk jams, lard pickles, &c which form the diet of the seamen in cargo steamers

cheeses, kippered herrings, tinned vegetables, and fruit, dehydrated fruits and vegetables and, of course cereals, tea, cocoa and coffee with a reasonable amount of wine, spirits and tobacco

Livestock may be taken according to the space in the ship That is all I need say about provisions on board on passage to the Arctic or Antarctic regions

*Natural Foods*

Under the heading of natural foods come seals, penguins skua gulls, and occasionally fish in the Antarctic while in the Arctic, seals, bear ptarmigan, arctic hares, and fish are plentiful

*Diet in Shore Bases*

In the shore bases or main camps most, if not all, of the foregoing are taken according to locality, but the wise leader keeps his men clear of tinned food as much as possible

In our winter quarters at Cape Evans, we had porridge, eggs, tea or coffee, fresh bread and butter, for breakfast, and sausages, bacon &c, not more than two days a week

The lunch meal was a light one consisting of tea or cocoa, bread and butter, jam, cake and cheese, sardines twice a week potted meats twice a week, and on Sundays we had a cooked course for lunch normally of fresh meat

The dinner or supper meal, consisted of soup fresh seal meat, mutton penguin, with onions, fresh potatoes while they lasted a pudding, apples occasionally, with lime juice to drink and bread or biscuits On birthdays, midwinter day and the day of the sun's departure and return, we had wine or alcohol of some sort usually a glass of port, to drink the health of "the hero of the day

One can compare the provisions of the pre war Antarctic expeditions with those of Byrd, Mawson and others, and also with those of recent Arctic expeditions Watkins, Binney, &c, but for the reason that the latter are so near civilization and much smaller undertakings, I prefer in this address the Antarctic contrast

*Admiral Byrd's Expeditions*—1929 *and* 1934

Admiral Byrd had chickens and Guernsey cows in his 1934 expedition —fancy! A dairy in the Antarctic! This is modern exploration *de luxe*

In his famous 1929 Conquest of Antarctica by Air Dr Cowan selected food for him with what he considered the proper fuel and vitamin value and estimated the daily needs and food consumption for each man, covered sheaves of paper with his calculations then went out and bought —

| | |
|---|---|
| Ham | 1 tons |
| Bacon | 3 tons |
| Beef | 5 tons |
| Pork | 2 tons |

| | |
|---|---|
| Lunch | [illegible] |
| Chicken | [illegible] |
| Turkey | [illegible] |
| Corned beef | [illegible] |
| Salt pork | 1½ tons |
| Corned shoulder<br>Corned tongue<br>Corned spare ribs<br>Pork sausage | tons each |
| Eggs | 500 cases |
| Powdered milk | 1 ton |
| Condensed evaporated and malted milk | 100 cases each |
| Cookies | 1 200 lb |
| Jams jellies and marmalade | 1 ton |
| Flour | 13 tons |
| Lard | 1 ton |

and a variety of articles not enumerated, more than twice as long as the foregoing list

Most expeditions are not so lavish They have not the money

### *The Night Watchman*

All Polar expeditions with an ambitious scientific programme keep permanent watch at the instruments Our night watchman was allowed unlimited cocoa and condensed milk, with bread, honey or jam beef dripping, or butter He usually made himself toast, the smell of which often woke the rest of the hut We frequently turned out to eat hot buttered toast and yarned at the stove with the night watchman We took this job in turns

### *Sledging Rations*

The sledging ration accepted by Scott's folk consisted of 34 4 *oz* per day per man, made up of 16 oz biscuit (which contained from 13 to 18 per cent vegetable proteins) 12 *oz* pemmican beef extract with 60 per cent pure fat 2 *oz* each of butter sugar and eating chocolate, and 0 4 oz. of tea and cocoa

In the above we were guided by what science seemed to say—"Increase your fats!" Carbohydrates seemed to dominate the sledging ration.

I may here mention that during long sledge journeys we started the day with a mug of pemmican, cooked on a primus stove a fine warming soup fairly thick, and occasionally flavoured with onion powder Then two biscuits and a mug of tea For lunch—tea three biscuits a stick of chocolate and some butter or cheese For supper, another mug of pemmican, three of the large sledging biscuits and a mug of cocoa which blew you out and was good to sleep on

Sometimes we supplemented our ration by pony meat—when we killed the ponies on the Ice Barrier march or found their carcasses in the snow cairns which marked our outward route Too much pony meat, on our highly trained stomachs was apt to cause dysentery according to Shackleton's story and my own experience

## Clothing

Of this, footgear is the most important. At sea big boots with woollen socks and senna grass or straw under the soles of the feet. Of course in bad weather we wore knee boots and thigh boots, which the sea often filled up.

Once ashore strong Norwegian ski boots with never less than two pairs of socks. During the winter, Russian felt boots which come up to the knee and were used for work in and about the hut. For work on the ice in very cold temperatures we had to wear finneskos the fur boots of the Laplanders or Finns. Three pairs of socks sufficed, and here I may say that lambswool socks are *facile princeps* for comfort and protection.

Always sledging over the Great Ice Barrier, on the glaciers and high Polar inland plateau, finneskos were worn, and when skiing in very low temperatures an additional oversboe made of canvas with a wooden sole.

Next we come to gloves. These are big fur mitts with a thumb piece and the rest of the fingers in one. Underneath these we wore long woollen mittens which left the finger tips free. For rough work about the hut, leather gauntlets.

Headgear. A balaclava hat, a sort of hooded contrivance that just left the eyes, nose and mouth free. Over this one usually put a wind-proof balaclava, with a nose protecting attachment.

Underclothes. Jaeger or Wolsey vests with long sleeves, long woollen drawers with an extra seat and crutch-piece. Jaeger or Wolsey camel-hair shirt, and over this a sweater, and for those who like to lug up, a thick heavy woollen pyjama coat with canvas side pockets.

Personally I never wore one, not even when the thermometer stood at 70 below zero.

Overclothes. Burberry overall and trousers or Mendelberg close-wove windproof stuff, made of sea island yarn. Some people wore cloth trousers. The thick woollen drawers and windproof trousers secured by short puttees over a warm fur boot keep you alive and kicking if you have a good circulation.

Furs were seldom worn except by those riding on dog sledges or flying as in Byrd's expedition. They get terribly hard if you sweat in them as one does when dragging sledges long distances. The Northern explorers got the Eskimo women to tease the fur with their teeth in order to work it down to the proper softness and pliability.

## Medical Comforts and Supplies

I can best describe these by referring you to Burroughs, Wellcome and Company's booklet "The Romance of Exploration and Emergency First Aid from Stanley to Byrd."

In the ship and at the base the surgeon's and medico's outfits are what you would get in any well found ship (not carrying lady passengers!). For sledging we had special portable outfits of "Tabloid" equipment which

w [illegible] and damp. The whole [illegible] 9lb [illegible] you would expect—cascara [illegible] cacia sunburn [illegible] emollients, iodine opium [illegible] lages hyperdermic syringe scissors, lancet and of course, [illegible] ophthalmics for snow blindness

We explorers owe the firm of Burroughs Wellcome a great debt for their supplies have never failed us In fact the late Mr H G Ponting photographic artist to Scott's Last Expedition developed all his negatives in the Antarctic with "Tabloid Rytol developer, as did Shackleton's people Lanoline played an important part for hands and faces chapped by exposure to the winds

I used 'Hazeline snow after shaving in the winter quarters and never had any trouble of this sort

*Medical Comforts*

These things included Brand's Essence, Bovril and all the hundred commodities an ordinary sick bay would keep in stock

HYGIENE

Lice and body parasites are unknown in modern Antarctic expeditions In fact, disease germs keep clear of the South Pole We did have bugs in the *Morning*, a little Norwegian whaler which took part in the Antarctic Relief Expeditions of 1902—1904, and we had bugs in the *Terra Nova* in Scott's Last Expedition but we smoked them out long before we got South

Bathing and washing are confined to the outward and homeward journeys in the ship and to the weekly bath at the winter quarters We washed our hands and faces once or twice a day and cleaned our teeth only in the winter quarters because water had to be obtained by melting the snow with our meagre fuel supply and this prevented any washing during the sledge trips

Clothing was only washed at the winter quarters, and many of us journeyed one hundred to one hundred and fifty days without washing, shaving, cutting our hair or cleaning our teeth Joyce, in Shackleton's Trans-Antarctic Expedition was out for over two hundred days covering a distance of 1,911 miles, without even a lick and a promise This is a record but one of his party died of scurvy and others had a very close call

It may interest you to know that discussing the matter with the medicos of these different expeditions, nocturnal emissions are very rare—probably because the explorers live frugally and do not go in for highly seasoned sauces and stimulants

In the winter quarters, latrines are of necessity covered in on account of snow drift which would very soon fill them up and turn into hard ice The best form of [illegible] rear is a deal seat with a hole in it and a wooden

[illegible] the faeces [illegible] once or twice a day [illegible] the sledge [illegible]
[illegible] all you require [illegible] snow

W[illegible] sledging, the calls of nature present a more serious problem, [illegible] back to the wind for urinating and for the other business, of course, face the wind. I know of two serious frostbite cases in recent expeditions—Skelton, Scott's Chief Engineer in the *Discovery* expedition got his backside very badly frostbitten whilst repairing the windmill [illegible]. Victor Campbell on Scott's Last Expedition, had his penis frostbitten, due to weakness and malnutrition. The thawing was a very painful business.

On the return journey of the Last Supporting Party, when Death was grimly stalking us on his white horse and bitter cold winds took all our remaining strength from us at the end of the day, and made us dread facing the outer air after a night's camp, we used to dig a hole in the snow, just before striking the tent and all three rear into this. At night we used a Cerebos salt tin to urinate in, emptying it into the snow, through which it percolated without much mess.

## Polar Afflictions

Psychology plays an important part in Polar exploration as well as in war and during the winter darkness one has to be constantly watching one's subordinates. Many men have gone mad after their return to civilization. Few go mad during the expedition, when the tension is not relaxed.

Of course, the reason why so few men go mad on these expeditions is, according to some authorities, that we were all mad before we started on such a hare-brained enterprise!

Looking back, I calculate that 13 per cent. of Scott's men were mentally deranged after the expedition. I will not give you their names. Four are dead, and the others are sane enough to sue me for libel!

### *Frostbite*

Frostbite is one of the nightmares of Polar life and travel. I have never been frostbitten myself, although I have made four voyages to the Antarctic and I have four times crossed the Antarctic Circle. It is largely a matter of common sense and care. At first the feet are affected, then fingers, nose, ears, chin and cheeks. Superficial frostbites are easily overcome by applying warmth but advanced frostbite often means mortification and consequent amputation although, in civilization an electrical instrument called the Pavaex is said to be capable of restoring circulation in severe cases of frostbite and gangrene.

Campbell, in the Northern party, speaks of frostbite and sunburn combined. After men get sunburned during summer sledging, a cold wind springs up and one's nose promptly freezes, and when thawed out is very painful. Campbell describes how Abbott's nose became one great blister

Scott had he lived to reach Cape Evans, would have had both his feet amputated, and I think the shock would have killed him in his exhausted state

Sir Philip Brocklehurst lost a toe in Shackleton's 1907 Expedition, but we have been reasonably lucky through paying head to the history of Polar exploration particularly from Nansen's teachings of hardship handed down from Arctic explorators

*Chafe*

There is great danger of chafe when marching in ski boots The leather freezes hard and a little carelessness may put one out of action for months Atkinson, on our first depôt-laying expedition, severely handicapped us by getting a chafe on his heel the size of a half crown This resulted in his being left behind at Hut Point and another perfectly fit man having to be detached from the sledge party to tend him

*Scurvy*

This scurvy is a dreadful business and, according to Admiral Byrd, a lemon powder containing the important vitamin C was carried for its anti-scorbutic properties The credit for this he gives to Coman, his American doctor Many more men have died of scurvy in the Arctic than in the Antarctic but as recently as 1916 a splendid fellow named Spencer Smith died on a sledging journey after having been ill for fifty seven days He was a padre and his symptoms were black protruding gums swollen limbs which eventually turned nearly black feet unable to bear any pressure on them elbows sore and stiff, pupils of eyes enlarged, some delirium in the later stages and just before his end complaining that his heart was behaving in a strange manner For the last forty days he was carried on the sledge the jolting of which must have been agonizing to him

I suppose my own case of scurvy starting after ninety days sledging, which followed on two months intermittent sledging is the most advanced case in modern exploration which did not end fatally It started with a stiffening of the knee joints, and then the muscles of my calves ached A few days later, on getting out of my sleeping bag I could not straighten my legs, and stood bent kneed like a broken down cab horse With the greatest difficulty I waddled along on ski, propelling myself by my arms Examination showed the backs of my legs green and blue like a gorgonzola cheese from the middle of the calf to the middle of the thigh However, I managed to stagger along for over 100 miles and then one day I fainted and dropped in my tracks on the ice

I ordered my companions to leave me, but this they refused to do, and in the end I was dragged for four days on the sledge by those two faithful comrades Hæmorrhage set in, and a form of dysentery probably due to the pemmican which ran right through me, and perhaps to the pony meat I took a little opium from the "Tabloid" medicine chest, and was given sips of brandy, of which we carried a small bottle, when eventually a new

fall of snow made the surface so bad that my companions could no longer move the sledge One of them P O Crean, made a gallant and successful relief march whilst Lashly, my other sledge mate, remained with me in our lonely little tent to nurse me until the end came

By great good fortune, after a 35-mile trudge with no food but a couple of biscuits and a stick of chocolate, Crean reached an outpost 15 miles from our base at Cape Evans Here he found Surgeon Atkinson, together with the dog driver and both dog teams, resting, and ready to go forward He indicated our whereabouts The teams were galloped out and our lives were saved

I was very near death's door on that occasion and when a man lies so close to death's door that he feels the wind through from a Greater Atmosphere the small things of life pass away My mind was extraordinarily clear, and I helped Dr Atkinson who made a special study of my case My heart was going beat beat miss, beat, miss miss I was paralysed from the waist downwards and my teeth were so loose and my gums so ulcerated that I could not munch a biscuit

Fortunately there was a bag of onions in this little outpost, and these cut up and fried in butter with some very finely sliced seal liver gave me nourishment and began the first stages of overcoming the malady Our ship the *Terra Nova* came in after ten days to the edge of the ice, and I was carried on board, a gaunt hollow eyed shadow of my former self

The *Terra Nova* had potatoes oranges and quite a fine supply of fresh provisions from New Zealand, and thanks to Atkinson's care and medical knowledge I pulled through I was invalided from the expedition, but actually recovered sufficiently to take part in the last voyage of the *Terra Nova* to Antarctica and arriving South again I heard of poor Scott's death and took command of the Expedition less than a year after all hope of my recovery had been given up by most of my friends

*Appendicitis*

Only one case of appendicitis had come to my notice in the South This occurred in Byrd's 1929 expedition and the man was operated on by the doctor of a Norwegian whaler who successfully pulled him through When the exploring ship was taken alongside the big whaling steamer there was a high sea, and the Norwegians used dead whales as fenders in the seaway!

*Toothache*

Such toothache as was experienced usually came about after sledge journeys were over Curiously enough petty ailments like neuralgia and headaches often showed up when the men had been back in the camp two or three days

*Dysentery*

Such dysentery as we had was attributed to eating too much pony flesh in Shackleton's and Scott's Expeditions, and to gorging seal meat in

Cmptn[illegible] Northern party There is a good deal [illegible] in the stories of Northern explorers Eskimos are reported [illegible] very badly as well as dysentery and pneumonia The Eskimos suffer a great deal from inflammation of the lungs, stomach ache and worms, but they are fond eaters and have very dirty habits

### *Snow Blindness*

Snow blindness or snow glare should be avoided by the proper use of amber glasses dark glasses and I believe with Crooks's lenses In Scott's first expedition the men made wooden goggles which completely covered the eye except a cross-shaped slit about ¾ by ¼ in through which they could see quite well We used zinc sulphate tabloids ground up and dropped into the corner of the eye, but the best cure in the world I believe to be a poultice made of hot tea leaves Of course any form of poultice aids one and no doubt a bottle of boracic lotion and an eye bath would help mild cases of snow blindness but you can't carry all these things made up We really used zinc sulphate to cure and cocaine to deaden the pain of snow blindness This is a very painful ailment smarting throbbing eyeballs warning one to be more careful in future and not to discard glasses

In Scott's first expedition Dr Wilson suffered more than anybody I think due to the fact that he was always sketching and using his eyes more than the rest

### Recreations and Keeping Fit

Tobacco has advantages in its solace but cigarette smoking is not recommended for those taking part in strenuous sledge journeys Scott was a great smoker, but he stuck to a pipe when there was any severe physical work before him

Alcohol was never taken sledging, except a half bottle of brandy for emergency with each sledge party As I have said only on feast days were any wines or spirit issued Our recreations were lantern lectures—including some magnificent pictures of our own life taken by Ponting We used to play chess and a little bridge but the more modern expeditions people in Antarctica can listen to the news story the songs, and beautiful music broadcast from Melbourne Buenos Aires or San Francisco

In the winter one usually goes to bed early because one is tired with the long day's work preparing specimens plotting surveys, working out astronomical observations, and so forth However even twenty-five years ago we had a pianola and gramophone records while the older expeditions had concertinas and mouth organs no doubt

Reading plays a very important part I read nearly all Dickens but found novels boring and substanceless whilst living on the Threshold of Adventure

Exercise naturally played a leading part We played football on the ice when there was light enough, but exercising ponies and dogs, together with

the ordinary back work hewing ice from the glacier, sledging it up to the hut, cutting a way out after a blizzard practising on ski—one naval lacked exercise

### Care of the Body

Keeping warm was an easy enough business in the ship, where you could always get some form of shelter from the piercing Antarctic cold

In the hut one could keep warm with two stoves and a kitchen range, but sledging in a high wind was at times most unpleasant Really, to avoid becoming chilled and too cold to sleep one should stop before fatigue overcomes one to such an extent as to render one liable to frost-bite or to that icy chilliness that eats into your very marrow

I have been so cold during a winter sledge journey when the temperature was 73° below zero, that I have wished for death However, a cup of hot tea makes a great difference and seems to run right down into one's toes

Salt water has a dreadful effect on fur clothing sleeping bags &c, and woe betide the careless explorer who lays his sleeping bag on the sea ice or spray washed snow Once the salt gets into fur you may as well say good bye to it

Sleep is a great tonic and in the summer we slept well in our fur bags during sledging trips We used eiderdown sleeping bags in the hut On Dr Wilson's celebrated midwinter journey his party used an eiderdown bag inside a fur bag and then they got practically no sleep

In Campbell's western party, when he was marooned like a troglodyte, in an igloo cut under the snow, his party suffered badly from dysentery but they lived like this for eight months and came out alive Two of the party went temporarily insane

I saw these people's clothes which they left in the igloo when they started on their 200-mile march over the ice floe to Cape Evans—I also smelt them!

Shaving Once a week a bath and shave, only in winter quarters There is no chance otherwise, and consequently one's breath turns into a mask of ice on one's beard It keeps the wind out, but is very painful to remove

Digestion One's digestion is generally splendid provided one sticks to one's ration, but any departure in quality or quantity from the customary sledging ration makes one feel as though a steam roller had gone over one's chest Nevertheless Victor Campbell of whom I have spoken ate a whole tin of biscuits and a bladder of lard during the first night after his return to winter quarters, and he got neither indigestion nor diarrhœa Personally I ate half a pound of butter and a huge plate of porridge *after my first square meal* when I came back from my bleak Spring journey

### *Weights*

The weights of the shock troops that is to say the seamen, Naval officers, and those that were intended to take a serious part in the sledging

altered very little. Most of us were fit men from hard physical work when we arrived in Antarctica and fairly fit men when we left. You are either fit men or dead men.

Fatness did not show much, except in an artist on one of Shackleton's journeys and this man suffered terribly through sweating in excess whilst sledging. We were remarkably free from rheumatism.

### Climatic Effects

The effect of the polar climate is to brace one up to a fine state of endurance, and I think will power was increased. I base this on Scott's determination to do his best to the end. What a will power that man must have had to write that long last message—although at his dying gasp, with both feet gone from frostbite—starving frozen through. I know my will power surprised me when I had to trudge along and fight that foul fiend scurvy. Crean showed an unlooked for determination in his 35-mile march for help—after he had already done 1,500 miles.

Moisture is a terrible enemy whilst sledging—think how moisture from your body and breath collects in the fur sleeping bag until your face seems to be resting on a cold mass of clammy slugs. Knees feel damp, hips feel damp, feet feel icy cold. Your shoulders, your elbows, your hands and your neck all have that clammy cold feeling, except at the height of summer. Even whilst having your meals, the steam from the cooker and from your breath moisture collects in a rime on the inside of the tent. The least movement brings this down in an icy shower.

Wind in the Antarctic adds to the general discomfort. A few seconds facing the blizzard is terribly painful. A few minutes almost unsupportable. Wind affects animals just as much as it affects men. The ponies turn their backs to it and with their heads sunk and their eyes dimmed with suffering and stupor—how they must hate the blizzard. Wind, the howling whistling wind, has a most depressing effect even in the winter quarters where one can be cooped up for days in an 80 mile an hour blizzard.

### *The Effect of Moonlight*

This full moon and blue and silver of dark sky and starlit night which makes the maturing female exclaim 'Every woman is entitled to be loved on a night like this' merely cheers the explorer and generates feelings of gratitude to his Creator at the beauty of it all. Aurora or Polar lights create a sense of awe and eeriness for they are mysterious in their grandeur.

Extreme cold 60 and 70 below zero deadens one's intelligence and almost freezes one's thoughts.

### *Sun Effect*

Acts like a charm. Smiles, goatlike antics, cheerful badinage, and laughter come back with the sun.

*Mutuh*

[illegible] in this [illegible]

FAUNA

I might mention that whales often go under the frozen sea and you can hear them blowing like the escape of an air blast from a torpedo

GENERAL

I think gentlemen you will agree that the great explorers like Stanley, Livingstone Franklin Nansen Abbruzzi Peary and others have aided, in their experience and writing, the expansion of Medical Science They have shown that there is little disease in their train as far as the Polar regions are concerned The same cannot be said in the case of those who explored Darkest Africa India, the Matto Grosso, and other fever-infested tropical areas We Polar blokes have no malaria no blackwater fever smallpox or even consumption, anyway, not in the Antarctic although it is a fact that amongst the Eskimos and other races of the Far North there is plenty of tuberculosis, a fact which is causing countries like Norway very grave concern

It is a long time since I took part in Polar exploration The Great War has come and gone and new troubles loom on our horizon but my Polar memories are as bright to day as they were in 1914 I think I have gained by my associations with the leading explorers of my time Of those I knew, Scott, Shackleton Nansen Peary Amundsen and that gallant French gentleman Dr Charcot have all crossed that silent trackless ocean which leads to the explorers Valhalla Every one of them has left a message inspiring to humanity These men have much in common with you surgeons and physicians who in your best endeavour continue

To strive to seek to find
And not to yield

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## SOME COMMENT ON TUMOURS OF THE LATERAL VENTRICLES WITH AN ILLUSTRATIVE CASE

BY SURGEON COMMANDER R W MUSSEN MD MRCP RN

BRAIN tumours are commonly regarded as being relatively rare, and we certainly do not see many in the Service In many cases of headache of uncertain origin we think of the possibility of new growth, but we usually find that neurological and ordinary radiographic examinations give negative results and in the absence of other obvious cause we label our patient cephalgia headache or neurasthenia according to our taste

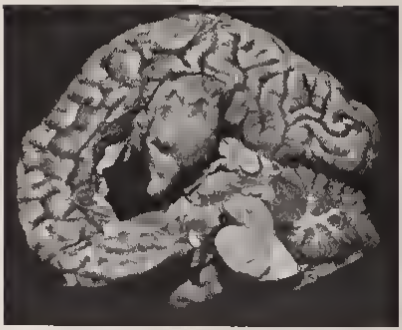
In an address recently reprinted in this Journal, Cahus [1] stated, however that with the exception of the uterus and possibly the breast the

brain is the commonest site of tumour in childhood and he thinks that with a little practice it should be possible to diagnose tumours in this region with greater accuracy than will find that they usually do at present He quotes Wilshere figures of 12 cases of primary intracranial tumour admitted during a condition, being slightly more frequent than disseminate sclerosis and more than syphilis

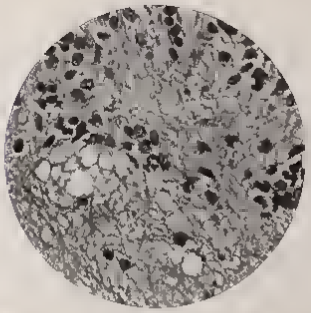
Much has been written about brain tumours in general, and I would like to confine myself to those of the ventricles showing the sudden and terrible results of obstruction to the flow of cerebrospinal fluid by a relatively small, benign easily operable tumour in one of these cavities It must be clearly understood however, that though these growths can be easily removed by a competent neuro surgeon they are not easily diagnosed Griffiths and Lynagh [2] a few years ago gave an excellent account of a rating who complained of headache and vomiting for which no cause could be found He was treated with aspirin and a purgative, and the symptoms were relieved and he felt quite well A month later, he had recurrence of the symptoms This time however they did not improve and he died within eight days, towards the end showing contracted pupils and signs of involvement of the pyramidal system Autopsy showed cholesteatoma of third ventricle Examination of the medulla was not possible in the case

An even more striking case occurred at R N Hospital Haslar, this year S W aged 28 was admitted to the Hospital in a state of coma and died in the receiving room within three minutes before clinical examination could be made This man had, apparently, been quite fit before and there were no entries in his Medical History Sheet prior to the day of his admission to hospital He had been on leave at his home a few miles from Portsmouth and had suddenly developed headache and vomiting at 4 o clock in the morning He did not wake anyone in the house, and was not seen by anyone till his mother rose at 7 a m She thought that his sickness was "in the nature of very bad bile, and called in a local practitioner who visited him during the forenoon and could find nothing to account for the symptoms His condition became worse during the day and when seen again at 7 p m he was unconscious Right pupil was slightly dilated both pupils reacting to light Some spasticity of right side was noted with exaggeration of tendon reflexes, both plantar reflexes being extensor He had some incontinence of urine Arrangements were at once made for his removal to hospital where he arrived at 8 5 dying in the receiving room within a few minutes

Autopsy was performed on the next day Brain weighed 1lbs 12oz showing some congestion and oedema Internal hydrocephalus of the right lateral ventricle was found this ventricle containing a firm pale, greyish white growth, 2¼ by 1¼ in weighing ¾ oz A projection of this structure, shown in the accompanying photograph, where it has been outlined by a black background was loosely plugged into the foramen of Monro, which showed some dilatation The growth was of uniform fine fibrous structure lying



[illegible]



[illegible] photograph showing fibrillare network with retrieved fowells. Reproduced by permission of Surgeon Commander [illegible] R.N.

[illegible] in the [illegible] [illegible] attachment [illegible] a pedicle [illegible] examination showed [illegible] composed of fine [illegible] strands, with few [illegible] A few [illegible] fibres were present A [illegible] of capsule was formed by a band of [illegible] compact fibrous tissue The general structure was loose and many holes or vacant spaces were found This appeared to be what Dandy would call a fibro glioma."

The history of this case as we had it at this stage was striking A young man in the prime of life with no premonitory symptoms had suddenly been struck down by increased intracranial pressure caused by a small growth, and had died within seventeen hours However later information from his mother disclosed that six weeks before his death he had been serving in a ship in the Mediterranean when she had received a letter in which he stated that he had probably been in a draft as he had pains in the back of the neck and a severe headache He had not reported sick and had soon recovered A month later he came home on leave and appeared his usual self Six days before death, while still on leave he had complained of a bad head This had not been severe enough to compel him to stay in bed and he had been quite well the next day

This case illustrates the sudden and dramatic results of a complete obstruction to the flow of cerebrospinal fluid at one of the narrower portions of its pathway The cerebrospinal fluid is formed by the choroid plexuses mainly in the lateral ventricles It passes from these ventricles by the foramina of Monro into the third ventricle thence by the aqueduct of Sylvius into the fourth ventricle and thence out through the foramina of Luschka into the subarachnoid space on the surface of the brain After a certain amount of circulation absorption takes place into the blood through the arachnoid villi delicate structures in relation to the venous sinuses mainly of the vault of the skull

Cushing, on theoretical grounds, divides the causation of hydrocephalus into three main groups (1) Increased formation of fluid, as in compression of the vein of Galen, with resulting engorgement of choroid plexuses; (2) obstruction of the narrower portions of the pathway along which the fluid flows and (3) occlusion of the arachnoid villi, through which the fluid is absorbed into the sinuses In practice, however, the process is probably very much more complicated, and consists of a series of inter actions of all these different factors The cranium of the adult being relatively rigid, vicious vicious circles arise, tending to raise the intracranial pressure more and more Thus it is obvious that a tumour may in the first instance produce increased pressure by either local venous obstruction displacement and compression of the vein of Galen, obstruction to outflow of cerebrospinal fluid from ventricles or by its own increasing bulk as it grows.

We often see, in the Service examples of hydrocephalus which are probably primarily due to obstruction of the pathway, practically always

[illegible] cases of [illegible] gitis and [illegible] [illegible] lly [illegible] on [illegible] [illegible] gradual [illegible] [illegible] result from the growth [illegible] the cerebellum [illegible] thus causing a [illegible] interference with [illegible] further [illegible] [illegible] is even more firmly [illegible] vicious circle is in being which will result [illegible] at its commencement. In the case [illegible] W. [illegible], we have seen a rather different process at work. Here was a benign encapsulated tumour the size of a duck's egg lying loose in the lateral ventricle. This man pursued his life as far as we know without any marked sign of its presence. On two recorded instances within six weeks of his death he had suffered from headache presumably due to the knob on the growth getting plugged into the foramen of Monro. The obstruction on these occasions must have been only partial and through some slight alteration of the pressure of the fluid probably due to extrinsic causes the knob slipped out of its dangerous position and the fluid was able to flow along its normal course. Finally one night when he was asleep the flow of fluid being slow and steady the knob became more firmly wedged into the foramen the pressure started to rise and the vicious circle was in being which resulted in death within a comparatively short time.

These tumours of the lateral ventricle are very interesting from a pathological and from a clinical point of view. Pathologically they are of varying kinds: ependymal fibroma or glioma, adenoma, fibroma of choroid plexus, embryonal ependymal tumour or angioma. They may arise from the ependyma, subependymal layer and from the component parts of the choroid plexus. The question as to whether any given tumour is "benign" or "malignant" might be debated at great length and probably the only real test in this respect is that of the life history of the growth. The ependymal glioma and fibroma are not entirely encapsulated as they spring from subependymal glial tissue [5] yet the growth is easily removable from its very small place of origin and the test of time applied to those cases which have had operation shows that the growth does not recur.

Dandy [3] describes a series of fifteen benign encapsulated tumours of the lateral ventricle among his own patients and has collected another forty from the literature for purposes of comparison. These cases usually occurred during the period of youth and half of them had a history of symptoms of less than a year's duration. The shortest history in his series is one of two months with headache, vomiting, diplopia, papilloedema, impaired vision, and slight facial weakness. Of course it is obvious that a certain number of these were infants, in whom subjective symptoms such

[illegible] of [illegible] when the [illegible] of the yielding elastic skull [illegible] diagnosis [illegible] Bilateral papilloedema [illegible] one of [illegible] stresses the fact that though [illegible] most important sign its absence never precludes the existence of [illegible]. His cases all came to operation, twelve recovering and three [illegible]. Clinically periodicity of attacks of intracranial pressure without [illegible] signs makes one think of the possibility of a ventricular tumour acting as a ball valve, but at the most these symptoms can only suggest the p[illegible] of a neoplasm. Operation is never justifiable without greater [illegible] localization and this is only obtainable by ventriculography. As [illegible] says: "Without ventriculography our knowledge of intraventricular [illegible] would still depend in the main on autopsy studies."

We may well ask, from the point of view of the Naval Medical Officer, what lesson can be learned from all this talk about a condition which [illegible] may think is relatively uncommon? The first point which appears [illegible] stand out is the extreme importance of an ophthalmoscopic examination in every case of headache. When the pupil is dilated by instillation [illegible] homatropine solution, it does not require much experience to ascertain the condition of the optic disc which is the part of the fundus which interests us most, and even if we cannot do this ourselves we can always have [illegible] done by an experienced ophthalmologist. The next point which is brought out is the importance of ventriculography as an aid to the localization [illegible] an intracranial tumour. This of course is a hospital procedure and [illegible] without risks, Grant stating that it has a direct mortality of about [illegible] cent. On the other hand, in view of the hopeless prognosis of an [illegible] ized cerebral tumour, it is justified in spite of the risk when the diagnosis has been made but other methods of localization have failed. In the "Health of the Navy for 1934" a very concise account is given of the method used at Haslar by Surgeon Captain Gibson.

Another point that may be briefly mentioned is the use of hypertonic salines in such cases as we have mentioned. Hypertonic salines when injected intravenously, by raising the osmotic pressure of the blood, promote the withdrawal of fluid from the tissues and lead to actual resorption of the cerebrospinal fluid [6]. This will lower the intracranial pressure. When administered by the alimentary canal they produce the same effects indirectly by their action in withdrawing fluid from the blood and so raising its osmotic tension. Thus a patient with an intracranial tumour may be in a semicomatose condition when first seen. Here, a rectal injection of concentrated salt solution may be sufficient to restore the patient to consciousness and make a full examination and localization possible. In any case such a procedure by lowering the intracranial pressure may produce a comparatively lasting effect by bringing about a break in the vicious circle which we have already described.

*Intradural Spinal Anæsthesia*

[illegible] speculate on the [illegible] of lumbar puncture [illegible] chemically taking S.W. as an example. We [illegible] think vaguely of meningitis or of subtentorial haemorrhage, [illegible] lumbar puncture would seem to be a perfectly rational [illegible] purposes of diagnosis and treatment. However it is obvious [illegible] fatal by lumbar puncture in a case of increased intracranial [illegible] block will tend to accentuate the vicious circle and, [illegible] blocking of the foramen magnum by the cerebellum [illegible] death from medullary anæmia. The answer to this [illegible] by the preliminary use of hypertonic salines in any case of [illegible] puncture if done after this will not have such immediate [illegible] may give us an answer of some sort to our question.

[illegible] I would plead for an attitude of greater optimism in all [illegible] tumour. A few years ago when such a condition was [illegible] was regarded as hopeless and the patient was often [illegible] afflicted by severe headache and probably blind. In later years palliative measures were adopted usually by means of decompression and these though they did not remove the growth certainly made the sufferer's end less terrible. Now however with the growth of neurosurgery and electrosurgical methods largely under the influence of Harvey Cushing and the American school a great change for the better has resulted. These patients will probably not be of much use to the Service afterwards but in the interests of humanity it is our duty to put them in touch with a recognized neurosurgeon as soon as possible after [illegible].

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## INHALATION AND SPINAL ANÆSTHESIA WITH A NOTE ON THE HISTORY OF ANÆSTHESIA


By Surgeon Lieutenant S. R. G. Timmins


### Condensed History of Anæsthesia

The [illegible] of surgical anæsthesia dates from Priestley's discoveries [illegible] nitrous oxide, hydrogen and oxygen from 1770 to 1774. In [illegible] Dr. Thomas Beddoes, the English physician and philosopher, [illegible] put these gases to practical use. He started the Medical [illegible] Institute where he administered gases principally oxygen for

the treatment of diseases [illegible] by Davy assisted [illegible] treatment of headache with inhalations of nitrous oxide An [illegible] chemist Michael Faraday who had been an assistant of [illegible] that ether vapour when inhaled produced [illegible] animals

Although both these scientists published the application of [illegible] oxide and ether to surgical operations it was half a century before [illegible] value in surgery was realized During these years people were [illegible] upon only as a last resort and then with all [illegible] difficulties of the operation limited by the suffering of the patient

An outstanding date in the history of anaesthesia is October 16 [illegible] when William T G Morton, a young dentist from Hartford Connecticut demonstrated the first administration of ether for the relief of pain during a surgical operation at the Massachusetts General Hospital From that time to the present many agents have been tried in an attempt to find the ideal anaesthetic

There were no improvements added to Morton's inhalation method of administering ether until Clover in 1877 invented an inhaler for mixtures of nitrous oxide and ether In 1901 Connell devised the first gas oxygen ether sequence machine In 1907 at the Boston City Hospital Ernest J Cotton and Walter Boothby constructed a similar machine Gwathmey used the principles laid down by Cotton and Boothby when he built the apparatus which has been used so universally throughout the U S A for the administration of gas oxygen ether mixtures In the past twenty years the Gwathmey apparatus has been perfected by Heidbrink and during that time other excellent machines have been developed by Connell Hewitt Mc Ivesson and others The latest advance in gas-oxygen ether [illegible] anaesthesia is the carbon dioxide absorption apparatus developed by Waters in 1931 which extracts the carbon dioxide from the patient's respired gases by passing them through a chamber of soda lime thus reducing the amount of anaesthetic gases and ether to approximately one quarter of what was used before this discovery and producing a quicker induction and smoother anaesthesia with good relaxation

In 1884 Koller extracted cocaine from the coca leaf A year later Corning first introduced cocaine into the spinal canal producing spinal anaesthesia In 1900, Tait and Cagliari first administered cocaine for spinal anaesthesia in California From 1901 with the discovery of novocaine by Einhorn until about 1915 spinal anaesthesia shared a prominent position with other methods in surgery Many complications and fatalities resulted from the use of spinal anaesthesia due to the imperfections in the procedure used and from faulty technique

In 1928 the derivatives of barbituric acid so called barbiturates appeared as anaesthetics Sodium amytal was advocated as an intravenous anaesthetic also nembutal Sodium evipan is a more recent barbiturate for intravenous injection

## [illegible]

[illegible] the physician [illegible] it is not surprising that [illegible] anæsthesia [illegible] with scepticism [illegible] Indeed, however, [illegible] few [illegible] seeing [illegible] the [illegible] was not [illegible] continued to [illegible] [illegible]

The subject of anæsthesia [illegible] is vast and controversial [illegible] It may be roughly classified under the [illegible] local general, and combination of local and general

Local anæsthesia [illegible] where [illegible] minor operations, is left [illegible] expert and [illegible] at the present time [illegible] same popularity in England as in America [illegible] local anæsthesia has a limited field for the average man Its use is confined to small things [illegible] where skin and others [illegible] class of cases Nerve block [illegible] requires an intimate knowledge of anatomy and much experience Gastrectomy under local anæsthesia is advocated by some but its advantage over general anæsthesia has yet to be established Any major operation undertaken under local anæsthesia must have in addition some premedication to dull the senses, taken in all, the amount of drugs injected and swallowed must be considerable—all the more poisonous to the sick body to eliminate

General anæsthesia may be subdivided into types and agents —

*Agents*—Gas, ether, chloroform, ethyl chloride and numerous modern agents such as ethylene, trichlorethylene vinethene &c

*Types*—Inhalation, intravenous rectal and *per os* Gas anæsthesia is usually associated with dental work, the incision of boils &c The development of this anæsthesia for surgical operations has been slow to reach its present day perfection—but it is generally acclaimed the safest of all the [illegible] agents—due no doubt to its low toxicity and to the fact that it is an inert gas which produces anæsthesia by purely physical means

The administration and maintainance of gas anæsthesia is greatly facilitated by modern machines It is claimed by some anæsthetists that it should be used for all surgical procedures The antidote to gas anæsthesia is oxygen Should a patient receive too much gas, the inhalation of [illegible] of oxygen will rapidly wash the excess from the system [illegible] modern apparatus is equipped with some device for permitting the

[illegible] This gas is a respirator[illegible] [illegible] assists in [illegible] patients whose respiration may be unduly [illegible] by narcotics or deep [illegible] sthesia

Amongst other advantages claimed for gas are (i) It is the anæsthetic of choice in cases of shock (ii) the incidence of post-operative pulmonary complications is greatly diminished (iii) it is not a respiratory depressant (iv) the production of mucus and other secretions is practically nil due not only to the lack of irritation but also because anhydrous gas manufactured by modern methods dries up any exudation that may be present so that the incidence of aspiration and bronchial plugging should be much reduced (v) the recovery is rapid after discontinuing administration of gas and there is a minimum of vomiting and nausea

The greatest disadvantage of gas as an anæsthetic is that surgeons complain of insufficient muscular relaxation particularly in abdominal and manipulatory work Some surgeons also claim that gas produces more bleeding Even such great advocates of gaseous anæsthesia as Dr K C McCarthy state that in abdominal surgery using gas Careful attention to apparently minor details often means the difference between success and failure the position of the patient the character and extent of the incision retraction sponging exploration careful adjustment of anæsthetic mixture pressure, rebreathing airways and other items greatly facilitate the procedure Success with nitrous oxide in abdominal surgery depends on adequate premedication, a skilled anæsthetist a gentle surgeon and the intelligent co operation of the operating team [1]

Ether however still remains the most popular anæsthatic of to day in England and in the Royal Naval Medical Service Chloroform is rapidly losing favour on account of its high toxicity It is claimed that animals anæsthetized with chloroform become anuric and remain so in spite of being given diuretic solutions The binding power of renal tissue for chloroform is far greater than it is for ether [2]

Cyclopropane of which I have unfortunately had no experience is claimed by some anæsthetists chiefly in America to be the safest anæsthetizing agent Cyclopropane (trimethylene) is a colourless hydrocarbon gas capable of producing as profound an anæsthesia as chloroform It is rapidly absorbed and rapidly eliminated is non-toxic and non irritating to the respiratory tract There is absolutely no contraindication to its use [3]

Vinethene (vinyl ether) for periods of short anæsthesia is also finding favour owing to the following advantages It produces anæsthesia rapidly is rapidly eliminated unchanged by way of the lungs has no undesirable after effects The time taken by 3 c c of vinethene to produce anæsthesia is generally about fifty-five seconds and will last a further forty to sixty seconds about sixty seconds afterwards most patients will have completely recovered [1]

CLASS X GENERAL ANÆSTH

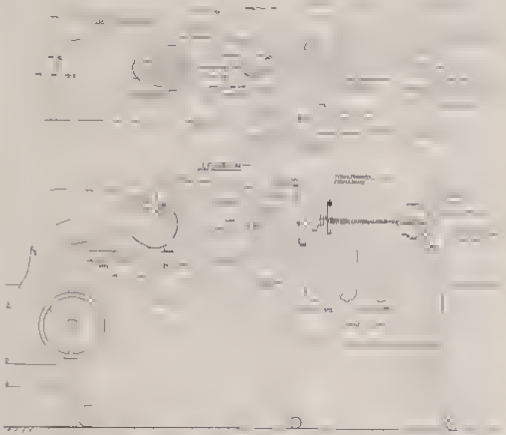
| Anæsthetic agent | Boiling point | Toxicity | Explosive mixture with air |
|---|---|---|---|
| Nitrous oxide | 128° F | Non-poisonous if adequate oxygen | Non-explosive |
| Ethylene | −155° C | Slight | Explosive |
| Ethyl chloride | 12·4° C | Fairly high | Explosive |
| Ether | 34·6° F | Fairly high | Explosive |
| Chloroform | 141·8° F | High | Non-explosive |

There are some people who have the peculiarity of being susceptible to various drugs foods and [illegible] Numerous accounts of individual hypersusceptibility have been recorded From all accounts it would appear that all anæsthetic agents in sufficient quantities have a deleterious effect upon the human body the minimum amount which is sufficient for the operation should be used and this is best accomplished with the gas oxygen ether combination rebreathing technique

There are numerous well known makes of anæsthetic machines which are well described in the various catalogues The one in use at the Royal Naval Hospital, Malta is the design of Sir Francis Shipway and although far from the ideal at which Sir Francis is aiming is nevertheless doing good service

It consists of a flow meter for regulating the amount of carbon dioxide nitrous oxide and oxygen These gases are passed over a bottle containing ether or other anæsthetic agent (the method employed is the wick method) The gases play round a wick which is dipped in the liquid ether, it being impossible therefore, for the ether in liquid form to reach the patient) Connected in series with this is the soda lime bottle for the absorption of carbon dioxide Adjacent to this is a small watch like arrangement which registers the pressure in mm Hg A rebreathing bag is also attached All parts of the apparatus are connected in series and there are one-way rubber valves which permit the flow of gases in one direction only On one side of the apparatus is the delivery tube and on the other the return tube thus completing a closed circuit of gas oxygen ether sequence anæsthesia The details of this apparatus will be seen in the diagram

Although induction with $N_2O$ is not unpleasant there being very little smell some patients express a fear of taking gas and struggle (unless already drugged by premedication) The less nervous usually lose consciousness without showing any outward sign of their mental state One great advantage of gas over ether for induction is that the stage of excitation is almost completely eliminated, and I cannot help feeling that less psychic trauma is caused to the patient (this of course varies with the mental attitude of the patient) also the dangers of (*a*) physical injury, (*b*) cardiac ventricular fibrillation are greatly minimized



breathing [illegible] ated, proceeded with [illegible] on an airway is introduced [illegible] triangular rubber head [illegible] chin strap, supports [illegible] latter was designed to [illegible] up throughout the operation. [illegible] valve on the mask open to [illegible]

[illegible] a closed circuit. The oxygen [illegible] of the patient and the latter is gradually [illegible] of anæsthesia is obtained. At this level the amount of ether [illegible] by reducing the tap nozzle being completely turned off so that [illegible] by ether is continuously being added to replace that which [illegible] through leakage. It will be appreciated that as the circuit [illegible] the amount of ether gradually accumulates, unless [illegible] of nitrous oxide [illegible] off.

The chief advantages in using this apparatus are as follows: (1) It greatly facilitates the keeping of a patient at the desired plane of anæsthesia.

(2) Economy. The unit of anæsthetic agent is considerably reduced (the average amount of ether used varies from 1 to 2 oz. per operation).

(3) The closed circuit keeps the anæsthetic agent confined to the patient. A great consideration in the operating theatre in a hot climate

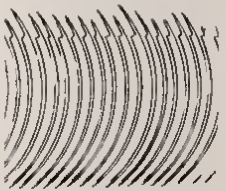


Fig. 2.

[illegible] The risk of explosion is greatly reduced.

Whilst giving an anæsthetic I watch the movements of the bag in preference to taking this as a guide to what the lungs are doing; this [illegible] with the pulse rate and blood pressure are my controls. The [illegible] of the gases in the lungs being indicated in mm. Hg. The idea of the mechanism [illegible] to be described is to attempt to register what the bag is telling us.

By looking at the diagram (fig. 1) it will be observed that fitted close to the rebreathing bag is a connecting tube leading to an oblong registering box in which is suspended a mica flap attached to which flap is an indicator continuing [illegible] well. The other end of the box is connected by a rubber tube to the [illegible] tube of the anæsthetic apparatus. This is mounted on a wooden board immediately behind the anæsthetic apparatus. The indicator records on the paper which moves from a containing drum round the distance roller to a collecting drum driven by clockwork. The indicator is moved up and down by the mica flap swinging to and fro as

[illegible] of the gas anæsthetic agent [illegible] of the [illegible] apparatus

[illegible] was designed (in this hospital) [illegible] of a number of [illegible] cylinder of carbon dioxide [illegible] cylinder for [illegible] each cylinder being filled with high [illegible] tubes All metal parts are earthed to the table which [illegible] the [illegible] by steel wheels Of interest the patient [illegible] metal [illegible] tubes lies in opposition with the skin and is [illegible] rubber

On examining the graph (fig 2) it will be noted that [illegible] is no pause at the end of inspiration normally The breath [illegible] go straight into the lungs and straight out again [illegible]

I quote here verbatim a few words on respiration by [illegible] great authority on gas oxygen anæsthesia —

"The anæsthetist should bear clearly in mind that the [illegible] of the breathing comprise the most important group of signs [illegible] only readily observed but reflect quite accurately the general [illegible] muscular and nervous systems Respiration is also influenced [illegible] the state of the circulation

With the onset of light uncomplicated anæsthesia respiration is usually [illegible] while the volume may be either increased or decreased The chief [illegible] in this place is readily influenced by external and internal [illegible] irregular respirations are often observed When the regularity [illegible] no external impulse (the effects of the anæsthetic) inhalation [illegible] When the impulse comes from external trauma the regularity [illegible] closely the force and degree of injury There may be a slight [illegible] inspiratory effort before sufficient time for exhalation has elapsed [illegible] may be held momentarily with the lungs more or less filled as in [illegible] This reflex phenomenon resembles the prolonged or duplicated inspiration [illegible] the body is suddenly subjected to a cold bath

As anæsthesia deepens [illegible] to the normal phase the respirations become regular and more nearly equal in time of inspiration and expiration Regularity full volume and uniform rate are characteristic of this plane although not always realized

In profound anæsthesia the respiration is inclined to be irregular but unlike light anæsthesia, the irregularity assumes more definite characteristics, reflecting the spastic or convulsive state of the respiratory muscles Prolonged exhalation is a classical sign Regular irregularity is sometimes observed in a series of short breaths respiratory pause followed again by larger breaths Typical Cheyne Stokes breathing may result but is rare [illegible] The expiration and respiratory pause may be so prolonged as to simulate cessation of respiration for the moment In fact the borderline between profound anæsthesia and the fourth stage may be so indistinct that one may merge into the other at any moment

The spasmodic character of the exhalation may also produce one or more well developed coughs by persons under a cough [illegible] to anæsthesia The vocal cords may approximate in a spastic state and produce a type of phonation or cry which may not be different until by the cry itself from that heard in light anæsthesia Occasionally a patient may pass from light into profound narcosis during such phonation Phonation of this sort is very misleading unless it is differentiated by observation of other signs It is more frequently noticed in children but is observed also in about ten per cent of adult patients

It is p[illegible] of the [illegible] a large [illegible] into [illegible] the [illegible] patients in other [illegible] of [illegible] the [illegible] respiratory [illegible] by a progressive [illegible] volume [illegible] states of ether and chloroform [illegible] anaesthetics to obtain a [illegible] it is very common with nitrous oxide and [illegible]

It will be observed that he says "the anaesthetist should [illegible] every breath." Would it not be of greater significance to have every breath *recorded* and the planes of anaesthesia visibly demonstrated? For example, in light anaesthesia the skin incision, the opening of the abdomen, and the handling of a hollow viscus and various other reflexes [illegible] are all recorded on the graph.

The advantages of this system which present themselves [illegible] as follows:—

(1) The elimination of guesswork. By a glance at the [illegible] it is possible to observe (*a*) any change in the depth of the respiration, which automatically tells one if $CO_2$ is accumulating or lacking; (*b*) any change of the rate of breathing; (*c*) the effect on the respiration of introducing ether, chloroform, vinethene, cyclopropane, &c., into the [illegible] (the change is far more delicate on the graph than could possibly be observed by looking at the patient); (*d*) any effect on the central nervous system, e.g. skin incision, pulling on the [illegible] or bowel, handling the gall bladder, &c. (provided of course the patient is not too "deep").

(2) At the same time the pulse rate is taken and any change may be compared with the effect on the respirations.

(3) The sum effect of these observations help the anaesthetist to give as smooth an anaesthetic as is possible, keeping the patient on an even plane—not too near asphyxiation and not too light.

(4) All anaesthetic agents are poisons and therefore it is possible by observing the recordings to use no more than is absolutely necessary, thus helping the patient by not throwing undue strain on the liver and kidneys, heart and in fact upon the whole system.

(5) A record is now made of the behaviour of the patient during the operation, a very useful thing if later a second operation is performed. Also it may be of use in case of post operative complications or to assist a post mortem (which so far we have been spared).

(6) There is no need for examining the pupils and consequently the [illegible] of corneal ulceration is lessened.

(7) The graph being at the head of the table and facing the operating surgeon, it is visible to the surgeon, who can tell at a glance the condition of the patient's respiration. It is here worth quoting Dr. [illegible] McCarthy at some length:—

The detection of anoxaemia requires careful observation of the muscular signs of the patient and the cardinal points are respiratory and cardio

[illegible]

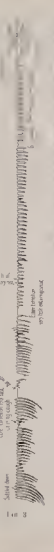


FIG. 3

[illegible] High pressure [illegible] falling [illegible] toxic [illegible] carbon [illegible] cases [illegible] exist [illegible] respiratory [illegible] and most [illegible] sign of [illegible]

It will be [illegible] points by which [illegible] rate and volume [illegible] tion is [illegible] on the graph, and [illegible] that the finer changes of the rate [illegible] more easily and quickly observed on the [illegible] watching the patient. The machine is [illegible] that there can be no doubt [illegible] whether the patient is breathing faintly [illegible].

The giving of an anesthetic [illegible] basis. It eliminates the [illegible] anesthetics when not in [illegible] quently [illegible] also it eliminates [illegible] some doctors have [illegible] and are artists in their [illegible] observant of small [illegible] and rate of breathing, which [illegible] experienced would [illegible]

employ the graph he could see at a glance the exact situation [illegible] former has trained himself to note mentally

The keen student of anæsthetics usually goes from one anæsthetist to another to pick up the art of anæsthesia from each individual carrying away with him a mental impression of what he has learned. He has in thing tangible such as a record or data other than that which his own powers of observation have given him and therefore finds it difficult to discuss afterwards with some fellow student any particular case which has been a graphic record such as is produced by this machine would be better able to explain what actually took place during the course of the anæsthetic

It is well known that individuals differ greatly. The experienced [illegible] anæsthetist tells us that the red headed man is sometimes more difficult to anæsthetize and that the alcoholic usually takes more anæsthetic agent than the more temperate. Hence it is that in anæsthetics there is no such thing as the rule of thumb, and I personally find it comforting to have a recording graph which shows immediately how the anæsthetic is being tolerated. Even an experienced anæsthetist can tell with ease this if simply because he has trained his powers of observation to the point where he can recognize these phenomena as they occur; never the less I feel sure that he would gain benefit from having these impressions recorded before him and it would certainly help in passing on that knowledge which he has gained by long experience, to the beginner and [illegible]

The graph would record exactly what has happened in a difficult case—in which many and unhappily for the anæsthetist. It might help to give some explanation as to why the patient was unable to tolerate the anæsthetic particularly in a case where from religious or sentimental reasons a post mortem is not granted.

As far as I am aware and here I am open to correction, there is no [illegible] model of recording machine as yet on the market but a recording apparatus was introduced in the U.S.A. by McKesson in 1929. This however differs considerably from the machine described above. I have not seen the McKesson recording apparatus but I have seen a few [illegible] of the graph produced which appears to be in a far more [illegible] form and does not record distinctly each separate respiration.

It is [illegible] my ambition that every anæsthetic apparatus should be fitted with a recording device. But it might prove of great value as a teaching aid where the effects of the various anæsthetic agents may be observed in the patient and so when the instructor points out that the breathing in the patient is periodic or shallow or to watch the effect of $CO_2$ &c. the [illegible] are recorded for him on a graph, as well as observe what the [illegible] is demonstrating and thereby get a quicker insight into the [illegible] of anæsthetics.

The machine is far from perfect and is still in its experimental stage

[illegible]

## Spinal Anæsthesia

There is no [illegible] of anæsthesia which [illegible] the cause of [illegible] rsial discussion than spinal anæsthesia. Its popularity can be [illegible] swing of the pendulum — vacillated by the enthusiast and condemned by the

Spinal anæsthesia has a definite place in the subject [illegible] and it appears to me that it is faulty technique and bad [illegible] the right type of patient which has been responsible for the hostile attitude which exists towards this type of anæsthesia.

Spinal like general anæsthesia consists of pre-[illegible] analgesia and post operative care. Premedication is [illegible] the same lines as for general. The average seaman being [illegible] patient requires very little premedication and it must be [illegible] the Maltese patient has seen his priest he is perfectly content [illegible] faith in his doctors.

The best known agents for the induction of analgesia [illegible] novocain, and percain. Stovain is the choice of the Royal Naval [illegible] Malta, and the technique is as follows.

The patient is put on his side, usually the left (never on [illegible] and told to arch his back as much as possible without causing [illegible] distress or pain. The skin has been prepared as for [illegible] &c.) A line is drawn with a piece of gauze soaked in [illegible] highest possible parts of the crest of the ilia; this line should [illegible] the third and fourth lumbar vertebræ. A horizontal line is also drawn [illegible] that a cross is marked over the site of injection.

The instruments (previously sterilized) which consist of the best possible lumbar puncture needle (8·5 cm. by 0·9 mm.) [illegible] complete with stylet, a small hypodermic syringe complete with needle, the stovain in ampules (1 or 2 c.c.) are all put into a sterilized [illegible] warm distilled water. The anæsthetist is of course prepared with sterile gown, &c. A few cubic centimetres of novocain are drawn into the hypodermic syringe and the patient is now told that he is going to have his back pricked with this needle (this to avoid any suggestion [illegible] on the patient). The skin and underlying tissues between the third and fourth lumbar vertebræ are thus desensitized.

There is a pause of a minute or two in which the local tissues [illegible] the tunic being occupied by filling the lumbar syringe through the needle with 5 per cent stovain in normal saline. The needle is now detached and stylet put in position. The point of the lumbar needle is placed in the puncture made by the hypodermic syringe and held at right angles to the iliac line between the crests of the ilia; it is pushed gently inwards and upwards until a definite "give" or click is felt. The stylet is now withdrawn and cerebro-spinal fluid should escape freely. The syringe is then connected and depending on the nature of the operation which governs the rate of injection

[illegible] The [illegible] withdrawn [illegible] arrival, determined [illegible] the nature [illegible] of the operation [illegible] used in

[illegible] admixture of three [illegible] concerning (a) the amount [illegible] to be withdrawn and (b) whether it should be [illegible] mixed with the spinal and then re-injected (c) the [illegible] the patient after the injection Each anesthetist [illegible] the subject

[illegible] following events may or may not take place during or immediately [illegible] injection —

Nausea and vomiting which usually passes off in a few minutes—[illegible] being told to breathe deeply with his mouth open

Slight fit patients may develop respiratory difficulty which passes [illegible] administration of oxygen and rubber mask

Twitching of the face This too passes off rapidly

(4) A fall in blood pressure The pressure is disturbing to the patient especially to the apprehensive type It gives little information beyond that afforded by clinical experience [illegible]

It has been my routine to give patients a small piece sweet to suck and/or sips of water during the operation Within a few minutes of injection the patient will if asked say he feels a burning sensation in his legs (some liken it to pins and needles) followed by a numbness of the legs and inability to lift them The height of analgesia is usually tested with a needle before the operation commences This being satisfactory the operation proceeds without further note

The duration of analgesia varies as a rule with the amount injected, within limits Sufficient analgesia for most operations is obtained with 1 to 1 5 c c of stovain, this being in the region of one hour to one hour and fifteen minutes duration

As stated earlier atropin is usually given this being in case, for some reason or other the analgesia is unsatisfactory or sensation returns before the completion of the operation and a supplementary inhalation anesthesia has to be used If atropin has not been given, avipan if not contrarily indicated is a useful adjunct

The operation over, the patient is returned to the ward on a trolley with his feet still higher than his head The foot of his bed is likewise raised 6 to 8 in and it has been my practice to leave the patient thus until sensation returns when the bed is then lowered

*After effects* —The post operative complaints are headache backache pain in the legs, and sometimes a temperature round about 100° F By employing the above technique we have found the incidence of headache to be considerably lessened (It is a well known fact that headache may follow lumbar puncture for examination of cerebrospinal fluid) The remedy for combating headache is as follows (1) A 1°C powder 10 grs are given (2) An enema of magnesium sulphate (3) A second lumbar puncture (so far we have not had to resort to this)

the advantages of spinal anæsthesia are —

(1) Excellent muscular relaxation is obtained—for strangulated hernia and volvulus, &c

(2) Peace within the abdomen —the bowels are not distended and surgeons express the opinion that it is easier to get at difficult appendices, &c

(3) For patients suffering from diabetes acute and chronic nephritis respiratory diseases and possibly cardiac diseases [2]

(4) The prevention of post-operative shock

(5) The question as to whether a patient has previously had a meal is not of such vital importance as with inhalation anæsthesia

(6) The fear of unconsciousness which some patients dread is abolished It is exceptional to hear a spinal analgesia patient state preference for the inhalation method

(7) In abdominal cases the absence of post operative vomiting is much appreciated by the patient

(8) From a Naval aspect it would appear that a surgeon who is very often single handed would in the case of an abdominal emergency or any condition necessitating an operation below the umbilicus find spinal analgesia an absolute godsend

(9) In some cases of obstinate sciatica spinal anæsthesia has been the means of a dramatic cure The relief of pain is immediate, and the patient witnesses the stretching of the nerve which has a valuable psychological stimulus

The disadvantages are not numerous and are far outweighed by the advantages The safety of spinal anæsthesia is a bone of contention Some users of this method e g Labat report a thousand cases of spinal anæsthesia without a death , McCormack and Gosset and Monod report no deaths in 5 000 and 2 000 cases respectively There can be no rule of thumb in spinal anæsthesia as in any other branch of anæsthesia and, if serious consideration is given to the case and to the anæsthetic required perhaps the incidence of accident would be considerably lessened

In writing the above article I have endeavoured to give a brief outline of modern methods and agents The advantages of mechanization over the old ' rag and bottle ' method have been discussed and I hope clearly proven Considering the tremendous advances made in anæsthesia and analgesia during the last decade it is to be hoped that the near future will bring forth even greater improvements in the means and administration of a better and more physiological anæsthesia

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D

## IN THE PREVENTION OF ACUTE RHEUMATISM

By Surgeon Lieutenant H. E. Dear O.B.E., M.D., R.N.

The wastage of man power and the days sickness occasioned by acute rheumatism and its sequelæ are disturbing factors which perhaps [illegible] emphasizing to a naval medical officer, certainly not to one who has worked at a Training Establishment or who has sat for any length of time on Boards of Survey. Yet they are matters of outstanding importance.

To be compelled to invalid a man towards the end of his service is, of course unfortunate but it must occur in the scheme of things that in a long march some shall fall out of the ranks. But acute rheumatism hits the youngsters—those who have only recently joined the Service and who are possibly still under training. Looked at from an economic point of view they are those on whom much has been spent and nothing as yet given in return.

The statistics of invaliding do not give emphasis to this subject because so many of the acute rheumatisms are eventually invalided from M.C.O. and are lost to their correct group. The practical question thus arises:

What can be done to prevent acute rheumatism? In the past we have looked upon acute rheumatism as an unfortunate accident and that if we saw to it that a youngster's clothes and bedding were aired and he was not allowed to sit about in wet clothes and so on then we had done all we could in the matter. But had we?

Some small items of information are accumulating to suggest that we can adopt more active measures to avert this disease. These measures are dietetic and medical.

Let us take the dietetic first —

(1) In the *British Medical Journal* of August 8, 1936 (p. 277) there is an article by Dr. Friend on "Diet in Relation to Physical Efficiency." It is founded on the writer's experience at a big Public School and is well worthy of perusal by all medical officers at Training Establishments. Amongst his conclusions occurs the following important statement: "A Progressive Fall in the Incidence of Acute and Subacute Rheumatism was coincident with an Increase of Animal Fat in the Diet."

How much time and thought have been expended on the diets in our Training Establishments. They give a high calorific value and are generous at times to the point of surfeit. But I have serious doubts whether their balance is all that might be desired, for I have a feeling that calories have been allowed to smother consideration of the important accessory factor of vitamins. Thus I once suggested the supply of butter

instead of margarine [illegible] informed that this substitution [illegible] Establishment in which [illegible] some experiments I did in [illegible] cabbage into some form which [illegible] at ruthless [illegible] leave it on their plates as [illegible] I fear the only result of these experiments was [illegible] on the state of the drains of the Sick Bay Cabbage [illegible] content may be good for the body but it can be made [illegible] to the nose

To revert to the question of fat [illegible] the best form in which animal fat can be administered [illegible] milk And yet milk as milk is not an article [illegible] Establishments Now that milk is almost a drug [illegible] and is issued free or at very reduced rates to Elementary [illegible] it seems a mighty pity that it is not issued to our boys [illegible] A pint a day per head might produce excellent results The [illegible] it is always the cost in such matters but I am dealing with [illegible] later on

(2) It is a clinical fact that acute rheumatism [illegible] often supervenes within three or four weeks of an attack of tonsillitis other upper respiratory affection Indeed the cases of acute rheumatism [illegible] bear a definite proportion to the cases of tonsillitis in a given community [illegible] the following figures from the *St Vincent* In 1931 there were [illegible] cases of tonsillitis and 25 cases of acute rheumatism In 1935 the figures were 110 and 30 respectively In this one case 21 per cent and in the [illegible] cent It is interesting to note that these percentage figures [illegible] very closely with the proportion of Dick 'positives' to Dick 'negatives' which I found to exist in the *St Vincent* [illegible] about 20 to 25 per cent I did this among the establishment were Dick positive or [illegible] scarlet fever The connection between acute rheumatism and [illegible] may not be obvious at first until we realize that they are both due to the streptococcal group of organisms It is not yet certain which [illegible] of the streptococcus causes acute rheumatism [illegible] very much because it is highly probable that the disease is due to the streptococcal factor which is common to all It may thus be that twenty out of every hundred boys are non immune to the streptococcus generally The difference between acute rheumatism and scarlet fever [illegible] is that whereas in scarlet fever the disease follows the [illegible] immediately, in acute rheumatism it is delayed for about three weeks This is rather in favour of the nucleo-protein [illegible] transition in the latter disease

The practical bearing of the tonsillitis [illegible] in the fact that we may be able to abort the [illegible] therapy This is clearly put by Dr Bernard Shingleton in his article on rheumatism in 'Recent Progress in Medicine and Surgery 1919-1934' He says It has been found that concentrated vaccine therapy for three

of four weeks after the throat might probably prevent relapses in many cases. He adds that the [illegible] given to all the junior children who suffer scarlet fever or diphtheria in that is a useful prophylactic measure after tonsillectomy.

Here then, is another weapon with which to attack acute rheumatism and fortunately it is not a very expensive one. It is suggested that 10 grs. of aspirin twice daily for three weeks after an attack of tonsillitis would be well worth prescribing as a routine.

(3) Since acute rheumatism is a streptococcal disease I suggest that another preventive measure worth adopting would be the administration of a dose of anti-streptococcal serum (concentrated) after recovery from tonsillitis. This serum only gives a short period of passive immunity but it should be sufficient to subdue the activity of any organisms which may have gained the lymph or blood stream and prevent them settling down to cause further trouble.

There are thus at least three measures which are worthy of trial with a view to preventing the onset of acute rheumatism. As far as I can see the only objection that can be raised against them is the expense, but it is highly probable that if effective in only a proportion of cases they would more than save the cost.

I have heard it said that it costs the Admiralty £90 a year to train a [illegible] boy. This becomes a dead loss if he is invalided. Then there is the cost of pay and medical treatment over the long period of sickness which acute rheumatism entails even if the patient does eventually return to duty. These facts must be used as a *pro contra* when considering the cost of the preventive measures suggested.

It is not, of course, seriously suggested that all these measures should be employed in every case of tonsillitis occurring throughout the Service. It might in the first instance be carried out experimentally at the Training Establishments. The issue of milk should certainly be done in all these establishments but perhaps the aspirin therapy could be tried out in one and the serum at another.

The point I wish to stress is that there is something more to be done in preventing rheumatism than by attention to hygiene only and nowhere in the world can controlled experiments be better carried out than in the Navy. Apart from the gain which might accrue to the Service it is possible that some statistical facts of great importance to the community at large might result from the efforts I have suggested. However, someone has to initiate them and I trust that my appeal may be heard particularly by the Medical Officers of our Training Establishments.

# LIGHT

BEFORE commencing [illegible] it is well to discuss briefly the physics [illegible]

Our fundamental ideas on the nature of light, matter and energy require modification as time goes on [illegible] by scientists Many views [1] on the nature of light were held in the classical schools of Greece and Arabia

The Pythagoreans considered that an object that was seen emitted particles which bombarded the eyes Newton (1704) approved of the emission theory of corpuscles travelling through an assumed ethereal medium The Dutch physicist Huygens considered light as a wave motion propagated as longitudinal oscillations Maxwell (1861) concluded that light is really due to the passage of electrical waves

On the communication of the theory of relativity the study of nature passed from the physicist to the mathematician Modern thought turned to the standpoint of those greatest of all thinkers Pythagoras and Plato who found the innermost secrets of the universe expressed in numbers

A mathematical formula tells how the radiation in the luminiferous ether behaves, which is really all we require to know so it is not necessary to discuss whether it consists of particles or waves

The tendency of modern physics however is to resolve the whole material universe into waves and nothing but waves The wave may be considered to be of two kinds—bottled up waves which we call matter and unbottled waves which are called radiation or light If annihilation of matter occurs, the process is merely that of unbottling imprisoned wave energy and setting it free to travel through space These concepts [2] reduce the whole universe to a world of light potential and existent so that the whole story of its creation can be told with perfect accuracy and completeness in the six words— God said Let there be light

The unbottled radiation can take any one of many forms of light, heat infra red or ultra-violet radiation, electro magnetic waves, x rays, $\gamma$ rays, and cosmic radiation

The radiations which affect the eye and are present in bright light, are the heat, light, and chemically active ultra-violet radiations In the spectrum of bright light at the red end are the vibrations of the longer wavelengths which are responsible for heat At the violet end are the shorter wavelengths which cause chemical action and between the two are the vibrations which give rise to the phenomena of light The visible spectrum consists of vibrations whose wavelengths vary from 728 microns at the red end to 397 microns at the violet and beyond these are the infra-red and the ultra violet Certain forms of electric light for instance the arc lamp, are very rich in ultra violet, the chemically active rays

The visual [illegible] which is the system [illegible] lated by [illegible] radiations is [illegible] the high [illegible] delicacy and intricacy [illegible] structure The rays pass through the cornea aqueous humour lens and vitreous At the retina the light vibrations [illegible] energy by simple [illegible] chemical reaction associated with a [illegible] sufficiency to initiate the faculty of appreciating and interpreting complex perceptual patterns

The effects of light on the eye have been investigated chiefly from the point of view of internal illumination At the present time there is work proceeding in the lighting of streets and vehicles There has recently been a rapid elaboration of research into problems of illumination in these directions

The amount of sunlight which is necessary for the maintenance of the eye in healthy condition has not been determined nor have the amounts which cause a deleterious effect to the various structures been calculated The effects of strong light on the cornea lens and retina have been studied as has also the effect of infra red and ultra violet light

## Definitions of Glare

A good deal of information on the subject of glare can be obtained from modern textbooks of Ophthalmology The subject is however usually discussed from the point of view of internal illumination I do not think that enough attention is given to the other aspects of the subject in familiar literature

A definition of glare in a well-known dictionary [4] is a bright light, a confusing and bewildering light also dazzling sunlight This is clear enough as far as it goes but it is when we wish to extend our knowledge on the subject from the medical aspect that we find a certain amount of difficulty A few references to standard textbooks will show what is meant by for instance, this account is taken from a well known work [4] on Ophthalmology Glare may be regarded as light in the wrong place The more concentrated the light the more disturbing the effect Glare therefore varies more with the intrinsic brilliancy of light than with its intensity Intrinsic brilliancy is defined as candle-power per square inch A metal filament has an intrinsic brilliancy of 800 candle power per square inch an arc light 20 000 candle power per square inch In general the ratio of intrinsic brilliancy of the source of light to that of the surrounding field should not exceed one hundred

Another scientist [5] says glare is an impression which denotes the unpleasant effect produced in the eye by an excessive amount of reflection from below It generally proceeds from snow desert sand rock water buildings or extensive paintwork and it owes its unpleasant effect to two causes —

(1) Because we are accustomed to proceed with our eyes directed straight before us or slightly lowered and an excessive reflected light or glare strikes the eye in an unusual manner which distresses us

(2) [illegible] normally [illegible]

Glare was defined by [illegible] and Waldram in a report to the research committee of the Illuminating Engineering Society [6] as the sensation produced by light so investing the eye as to inhibit distinct vision The differentiated —

(a) *Veiling Glare* —Light uniformally superimposed on the retinal image which reduces contrasts and therefore visibility This is typically seen in reading under the open sky

(b) *Dazzling Glare* —Adventitious lights scattered in the ocular media so as not to form part of the retinal image This is the most common and most distressing type

(c) *Scotomatic or Blinding Glare* —Produced by light of sufficient intensity to reduce the sensitivity of the retina It corresponds to all heavy over exposure in photography

An American scientist expresses himself thus ' Glare is a condition of visual discomfort which is dependent on two factors

' One is attributable to the failure of the eye to adapt itself to the stimulus of small area and high intensity

" The other factor is a depression of visual acuity

The man in the street gets his learning from advertisements for tinted glasses It is usually put forcibly and truthfully but is somewhat exaggerated

The following is a fair sample

The menace of glare is everywhere From every direction concentrated light attacks the eyes with blinding brilliance shiny surfaces auto headlights papers city lights beaches everywhere glare assails the eyes and through the eyes the nerves, exacting a heavy toll in decreasing energy

## Glare and the Sailor

Man is adapted to the sunlight which is normally present in the place where he lives This holds good up to a point, but there are exceptions to the law which postulates the adaptation of the structure to function in the case of sun glare in all climates

In the Royal Navy we are constantly subject to glare on foreign stations and to a lesser degree on the home stations This is very much the case because a big percentage of the ships company must necessarily live between decks in artificially illuminated spaces in a modern warship with the result that the individual is subject to glare when he comes to the open on the upper deck on a sunny day when the light is reflected from the bright work and the surface of the sea

Rapid transport too has shortened the time of adaptation to new environments with a consequent increased strain on the eyes In a very few days, he is often transported from the ideal illumination over the green fields of England to the tropics where the strong sunlight is accentuated by the greyness of parched ground and masonry and often too by areas of bright paintwork

Apart from sunlight the sailor may inadvertently suffer from the effects of radiant energy in the searchlight or in welding I have seen cases of eye trouble in the Navy from looking at the image of the sun in a calm sea and also from looking at the reflection of the sun in the windscreen of a motor car during a journey

### Symptoms of Sun Glare

The symptoms of glare vary according to the amount present and the type and condition of the individual

If we consider the average person ashore for the day in the summer—in any place in the Mediterranean for instance, we often find symptoms as follows —

Pain is experienced in the inner part of the eyebrows owing to the strong contractions of the corrugator supercilii pyramidalis nasi, and the orbicularis oculi muscles This screwing of the eyelids and wrinkling of the brows narrows the area of exposed eye and therefore of the entrance of light The strong contractions are supposed to squeeze the supra orbital nerve against the frontal bone and so cause pain and headache radiating through the area of supply of the 5th nerve

There may also be pain in the frontalis muscles, and in the occiput and occipital muscles The occipital pain is attributed by some to the fact that the area covers the visual area in the occipital cortex of the brain Again, the intrinsic contraction of the pupil under the influence of light mechanically presses on and so over excites the sensory nerves with which the iris is so richly endowed

Again, the sensory nerves in the choroid may be painfully stimulated by the action of light on the terminal filaments of the 5th nerve in the cornea and conjunctiva and may be irritated by the action of the light rays

The effects of glare are most marked when the eye is dark adapted then the retina is ill attuned to a sudden and excessive light This is well seen in comparing the relative effects of motor headlights during the night and during the day A further point which accentuates the effects is that the pupil does not react rapidly enough to prevent the excess of light from reaching the retina [7 8 9]

High myopes with prominent eyes will have severe symptoms owing to the thin choroids and scanty amount of retinal pigment The colour [10] of the iris is unimportant as a method of deducting glare susceptibility, as glare asthenopia is not a manifestation of want of protection due to deficient pigmentation I am inclined to say that this refers to the less heavily pigmented normal eye than to the markedly deficient pigmentations A case of albinism with visual acuity of military standard had to be invalided from Malta on account of distressing photophobia [11]

Astigmatic individuals are more susceptible to glare than others It is a well known fact that men are invalided home from tropical stations on account of incapacitating eye symptoms accentuated by glare While at

home these individuals do not suffer to the extent they [illegible] work without artificial aid. The symptoms in these cases [illegible] due to the continued effort of the mechanism of the [illegible] to focus ordinary visual pictures in the strong light as these pictures have now clearer outlines and are more detailed owing to the stronger illumination. It is held also that the screwing up of the eyes causes and increases the existing astigmatic error.

In the condition of hypermetropia the eye is likely to become fatigued by the effects of the sun glare [12]. The squeezing of the eye structures and pains may last while the person is in the sun or it may gradually pass off as the eye becomes accustomed to the strong light. In others less fortunate there follows a slight headache while in the sun and then a gradual inability and disinclination to face sunlight and in addition a hypermetheain in artificial lights. These patients are difficult to examine with the ophthalmoscope. Should a person have a touch of the sun glare asthenopia becomes more severe.

Apart altogether from the effects of sun glare on the eyes following short exposures there are other results which result from residence in tropical countries during one or more hot weather periods.

Livingstone [13] made numerous investigations in Irak. He found that it was exceedingly rare for any subject to experience the full glare of a hot season without fatigue of the ocular system in one form or other. Fatigue of accommodation and convergence is almost universal reduced light sense and threshold are exceedingly common and peripheral contraction for white and for colour occurs.

Glare symptoms may have a functional element and also the known symptoms of sun glare may be seized upon by the malingerer. As can be easily imagined, the person best fitted to deal with those cases in the first place is the Ophthalmic Specialist.

### The Individual Structures as Affected by Glare.

We are aware that the fundamental principles of the biophysics and physiology of radiation are still unsolved and the real action of radiation on the living cell is still unknown [14]. However many facts are known and new discoveries are being made as time goes on.

Before going on to the consideration of the pathological processes caused in the eye by excessive radiant energy it may be stated that the aqueous fluid absorbs heat waves strongly but has little action on the luminous and ultra-violet waves. The cornea offers little resistance to rays of wavelength greater than 295 microns, but all below that are cut off. The lens absorbs all waves of any wavelength less than 390 and a certain number up to 400. The vitreous absorbs wavelengths from 280 to 290.

The shorter ultra violet light waves can cause conjunctivitis desquamation of epithelium corneal opacities and lenticular changes. Marked changes in the anterior capsule of the lens can also be effected [in 16]

The [illegible] wavelengths lay in [illegible] mainly thermal effects, while the shorter ones, which [illegible] ponded to the intra molecular oscillations by increasing [illegible] motion produce molecular disintegration with consequent photo [illegible] photo chemical and photo molecular changes [17]

Corneal, lenticular and retinal changes have been studied and described in detail in the case of the rabbit's eye The area of greatest corneal damage was situated centrally Lenticular disturbance was chiefly at the periphery Retinal changes were vacuole formation and disintegration of the ganglion cells [18]- The absorption of the ultra violet rays represents the major part of their action [19]

It is maintained that the action of the infra red rays is founded on the transmission into a thermal form of energy [20] Experimentally, on rabbits also changes are effected in the pigment cells of the iris and ciliary body, lenticular opacity and changes in the retina and choroid [21]

A more detailed description of the effects of ultra violet light on the cornea will now be considered

## Effects of Ultra violet Light on the Cornea

The active rays are absorbed into the protein molecules and produce photo chemical changes of the nature of denaturation When the reaction is pushed to extremes the ultimate result is coagulation of the proteins and eventually death of the cell This abiotic reaction with the conjunctivitis which accompanies it produces clinically the characteristic symptoms of photophobia The acute distress which accompanies it is due to the irritation of the corneal nerve endings after the injury to the epithelium

The first signs are delayed in their appearance until some hours after the exposure which gives rise to them The symptoms last from a few hours to a few days, their duration depending on the severity of the exposure They are characterized by pain photophobia lacrimation blepharospasm and ciliary neuralgia while for some time afterwards typical glaucomatous haloes may be evident due to œdema of the cornea

This clinical syndrome is met with as industrial photophthalmia in all conditions where exposure to short-waved radiation occurs From time to time, within recent years, it has caused consternation in cinema studios where an abundance of photographically active light is necessary

The direct light of the sun contains an insufficient quantity of ultra-violet light to produce the reaction in ordinary circumstances but when it is reinforced by a glare of high intensity reflected from a surface of great extensity as the sea, a desert, or a snow field, a mild degree of solar ophthalmia develops This is a condition well recognized by mountaineers and explorers and is indigenous among Esquimaux Neither are the animals in snow bound regions such as the Polar bear, exempt

In high altitudes there are more ultra violet rays to affect the eyes

ways to the fact that [illegible] these rays [illegible] atmosphere

Chronic photophthalmia [illegible] metumes met with [illegible] and others who are frequently exposed to sun [illegible] waved energy and on the snow fields of all parts of the [illegible] frequently observed In the latter regions the condition may [illegible] permanent infiltration of the cornea with the formation [illegible] opacity running transversely across it corresponding [illegible] which is narrowed by approximation of the lids [illegible] such as possible the distressing glare from the snow

In the tissues of the cornea, therefore as occurs elsewhere on the surface of the body the cells are injured by small [illegible] of radiation with great intensities they are destroyed

### Effect of Glare in the Retina

Retinitis [22] from glare arises from the effects of bright light on the the fovea, especially from observation of an eclipse of the sun electric light as in the intense flash of the short circuiting of a strong current looking at the sun's image in the wind screen of a motor car at the sun's reflection from a calm sea or again at the [illegible] heliographic exercises

The subjective disturbance consists of a positive scotoma like an after-image at first similar to that which one obtains when one has looked at the sun for a short period of time After that however a negative scotoma arises and this remains after the disappearance of the positive one and leads to a permanent weakness of central vision

The objective examination often reveals only a circumscribed clouding just in the middle of the fovea which can scarcely be differentiated from a somewhat enlarged foveal image The effect of glare on the retina is a combination of photo chemic and heat injury mostly due to the effect of the ultra violet rays [23]

The action of the sun's rays is at first a thermal change of the outer portions later followed by chemical and atrophic changes which destroy the finer structures of the rods and cones of the retina with the resultant atrophy even to the perceptient cells of the layer These cause disturbances of function As well as the disturbances of the function from opacities of the cornea and media, there is destruction of the retinal cells the thickness of the optic nerves and atrophy of the visual centre [24]

Among the personnel of anti aircraft defences and in the telegraph workers who have to look after the lines after disturbances ring scotoma occur between 40° and 50° (flyers glare) The cause of the condition is a glare effect upon the whole retina through the diffused light from the vault of the sky

The fundus shows no change in this

The prognosis is favourable

One avoids this glare by means of glasses, which are without any colour below yellow in the middle and smoke grey above (Zadn) [25]

### Radiant Energy and the Lens

The effects of radiant energy on the lens will now be considered

This is of great interest owing to the possible relation to senile cataract causation

The theory [26] most generally accepted regarding the action of radiant energy in the production of cataract is that it affects the ciliary body in the first place and that the lens suffers a secondary degenerative change due to the alterations in the secretion of the aqueous or the production of toxins

Van der Hoeve [27] has extended this to account for the production of senile cataract by the light of the sun the light being deflected on to the ciliary region by the dispersion during its passage through the lens

Nutritional and toxic changes of this nature are certainly the cause of complicated cataract, but all the evidence of recent work seems to implicate the direct action of light upon the lens proteins themselves and upon the constituents concerned with the regulation of its metabolism rather than with slight alterations in the dialysation of the aqueous humour The objection raised to this direct action of light, the slowness of the process is completely answered by the recent work upon the dynamics of protein denaturisation Moreover, in those cases which might appear to indicate this most clearly—glass blowers cataract—the lesion in the lens in no way resembles a complicated cataract in its structure as seen by the slit lamp Schnyder [28]

### The Prevention of Glare

The way to prevent that pain from glare, which we are all liable to suffer from when going suddenly from a compartment or shaded area into the open sunlight, is to look out into the bright light for a short time while still under shade As already mentioned the pain caused under these circumstances is mainly due to the sharp contraction of the iris to shut out excessive light from the exposed ocular nerves and unadapted retina

Sun-glare symptoms may be prevented by the use of protecting glasses These have been studied chiefly with regard to healthy eyes They are commonly used in summer in England and may be arranged in three groups —

In the first category we can place the common coloured glasses which have been and still are being produced without any scientific basis, and used to be recommended for diseased as well as for healthy eyes A good deal has been said and written about this type of glass, and the result is that many people will not use them unless they are recommended to do so by an expert This is all very well, but it is not necessary for the average person who takes care to buy only the products of reputable firms and is

well held by the frame It is wise to allow a space between the eyebrow and the frame in order to permit the circulation of the air between the glass and the eye and prevent trapping heat and moisture

I have come to the conclusion that properly fitted anti glare glasses whether coloured or smoked prove adequate for their purpose for healthy eyes and the ordinary intelligent person can enter a shop and purchase and wear them with confidence It is difficult to imagine that even the young person who wears only these coloured glasses which suit her personality can injure her eyes if care is exercised I have seen anti glare glasses with air bubbles, streaks corrugations and even with cylindrical and spherical values but these are observed and rejected by the meanest intelligences

The second group contains those glasses which absorb the ultra violet ray The well-known ones Crookes Ultrasin Hygat, Hallauer, Euphes, Softite, and others, are useful for this purpose

Vogt recommends iron oxydul glasses for the absorption of infra red rays which is the third group Crookes glasses, number 140 with iron oxylate or 217 with ferric carbonate are likewise excellent

Glasses equally good for either end of the spectrum are not in use though some of Crookes absorb some ultra violet and some infra red rays

The best type of protective glasses for very hot summer sunshine are glasses which fit well and protect equally from ultra violet infra red and the desired degree of visible light These are glasses covered with or having a thin metal layer some have platinum some gold and some silver They are very comforting also in some diseased states of the eyes and have an additional therapeutic effect in certain cases These must necessarily be prescribed by an ophthalmic specialist to whom first all other cases where there is the slightest doubt should be referred for opinion and advice Sun glare very often prevents the full enjoyment of tennis in the tropics Some people find it necessary to wear anti glare glasses of a suitable shade and others are quite happy to wear an eyeshade above the eyes These are especially useful for those individuals who are not photophobic in the ordinary way but who have muscæ volitantes which are very frequently acquired as the years progress The shade cuts off the bright radiations from above and reduces the scattered intra ocular light It causes a great increase in acuity of vision which can be appreciated by even the least sensitive of persons

### Glare in Ships and Offices Ashore and its Prevention

The presence [30] of glare in ships is guarded against by avoiding excessive illumination choosing suitable positions for lights and the adequate use of shades

Illumination values were recommended for the various compartments in H M Ships by the Admiralty Electric Lighting Committee in 1923

In [illegible] occupations where very fine work is [illegible] illumination is necessary The Industrial Fatigue Research Committee have shown that the [illegible] work in the printing trade is not attained [illegible] illumination of less than 20 ft candles The illumination may cause the symptoms if not properly placed

In average well lighted offices 10 to 12 ft candles are available This is recommended for clerical work in general in a report by Ives and Syndastrict on United States Public Health Service on the lighting of Post Offices

Allowance must be made for people with impaired visual acuity who require a higher degree of illumination than those with good vision so that a light which would cause glare for some individuals would be only adequate for others

It is necessary to bear these facts in mind to ensure the maximum [illegible] of good lighting for the particular work in hand by the individuals as well as to prevent the deleterious effects of glare

It is easy to appreciate how much is added to efficiency and comfort by the supervision of illumination in ships and offices by Medical Officers

## Glare in Class and School Rooms

The ability [29] to see writing on the blackboard in the schoolroom may be seriously limited when light reflected from the board is intense

One of the most common causes of interference with vision in school is the reflection of daylight at eye level The glare effect of the reflected daylight depends on the following (1) The amount and distribution of daylight reaching the board (2) the amount of light reflected from the surface of the board (3) the direction of the reflected light, (4) the situation of the desks in relation to the direction of the reflected light, and (5) contrast between background and writing Many members of a class may be subjected to the effects of glare from the blackboard School rooms should be properly equipped with windows suitably shaded and with a tilted blackboard with a good dark surface properly illuminated

## Glare in Operating Theatres

Glare is also sometimes encountered in operating theatres It is then caused by looking into a part of the theatre not illuminated by the shadowless lamp which is one very often in use in modern operating theatres

The glare is avoided by uniformity of lighting in the theatre This may be attained by having the whole ceiling a large shadowless lamp or having a cornice of panel lighting all round the theatre

Glare [31] is also caused in operating theatres when work is done in daylight if the walls of the operating theatre are bright in comparison with the table The bright shiny surface of light coloured walls is not desirable

These requirements present no difficulty from the engineering or

architectural points of view [illegible] Sir William Abney has regarded as an unsuperfluous [illegible]

## Glare from Motor Headlights

Before concluding, there are a few more points which should be referred to, to make some reference to the question of glare from the headlights of motors on the road. This is a subject which is receiving much attention [32]. In this country it is generally accepted to note that it is claimed that glare is less with yellow light than with white. If a yellow light were placed in front of an ordinary headlight this would undoubtedly be true because the intensity would be greatly reduced. There is no evidence which would support the contention with regard to the quality of illumination.

Coloured lights of equal apparent brightness cause unequal amounts of contraction of the pupil [33, 34], and consequently in the return of colour sensitivity is much the same for all colours except for white where the recovery is rapid [34].

It is also said that yellow light causes less dazzle because the peripheral retina is less sensitive to this wavelength. This is partly true but it will be less effective in providing the light for stimulation to the peripheral retina for the ordinary purposes of vision.

It is a matter of interest [36] and [illegible] direction on the road to realize that the majority of non photopic individuals have a higher glare contrast value with binocular observation than when using either the right or left eye only and a higher value with the right than with the left eye.

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# THE CHINESE PROCEDURE OF ACUPUNCTURE

BY STEPHEN BEDFORD and SOUTHWELL SANDER MB BCh DPH

ACUPUNCTURE originated in China over three thousand years ago and the earliest extant work on the subject was written in the fourth century B C Though it is still practised in most parts of China to day, there has been no development of the art during the last one thousand years The procedure of acupuncture is intimately bound up with the Chinese theory of the origin and evolution of the universe, and some discussion of this is necessary before the theory of acupuncture can be explained

According to the Chinese, in the beginning of things there was a state of Chaos or Absolute Nothing and this they represented pictorially by the symbol of a hollow sphere—



Out of this Chaos Primordial Matter was evolved which was fluid in nature and represented by the symbol of a solid sphere—



By revolving this fluid matter [illegible] from it there were evolved

[illegible] called the [illegible] Yin [illegible] symbol



[illegible] five elements [illegible] that all matter cont[illegible] Yang and Yin only in different proportions. Chang[illegible] essences are constantly taking place, but follow [illegible] of these changes is illustrated symbolically [illegible] lines called the Pa Kua. The complet[illegible] the Yang and Yin is shown thus—



This symbol is frequently [illegible] and is used as a design on fabric[illegible] principles of Yang and Yin form th[illegible] ancestor worship, the arts and med[illegible]. In this sch[illegible] Man is included, and in him various organs are represent[illegible] five elements —

| [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
|---|---|---|---|---|
| Liver | Lungs | Heart | Spleen | [illegible] |
| Gall bladder | Large Intestine | Small Intestine | Stomach | [illegible] |

The number five is of great significance and in the scheme of nature things are frequently grouped in fives. Each of the five elements has several factors associated with it called the parent, child, friend and enemy factors. For example, water has metal for a parent, wood for a child, earth for an enemy, and fire for a friend. Each element too has five corresponding colours, tastes, musical notes and qualities.

[illegible] and parts [illegible] symbolic use [illegible] treatment and [illegible] with the position of [illegible] the Zodiac [illegible] of the heavenly [illegible] as [illegible] varied with [illegible] and it [illegible] that changes in climate affected the physical state [illegible] compass was always [illegible] importance in [illegible]

The [illegible] chief [illegible] treating ailments was [illegible] so that their actions were complementary and so that the Yang and Yin elements were balanced and health restored. Each of the [illegible] elements had a disease associated with it [illegible] earth and constipation [illegible] and cough fire and epilepsy

Man was considered to possess two souls a material and a spiritual and at death the spiritual ascended to heaven and the material remained on earth This explains the observance of the custom of ancestor worship in China for the deceased are supposed to be present in heaven and on earth and their spirits must be honoured and placated

## The Practice of Acupuncture Explained by Chinese Cosmogony

The life of man is ruled by the great forces of Yang and Yin In the normal state these two principles balance each other but they are all the time in a constant state of flux If this state of flux is uninterrupted then there is health but if for any reason interruption of the flow occurs, then disease follows The Yang and Yin essences circulate through the body by means of twelve channels The course of these channels is not strictly laid down nor are their anatomical relations specified but they begin near the toes and fingers and radiate to different parts of the body This circulation of the Yang and Yin through these channels is analogous to the earlier conception in Western Medicine of the circulation of humours in the body excess or lack of which were factors in producing disease

Acupuncture by means of a needle allows the excessive and harmful humours to escape and so equilibrium is obtained and health restored

The needling process can only be done over certain selected places in the course of the twelve channels at these places humours can be let out and 'vital air' let in Chinese authorities do not agree upon the number

(1) Round needle. It is [illegible] head with a pointed tip. It is used [illegible] is healed before use.

(2) Spoon needle. This is [illegible] bordered needle.

(3) Round needle. The shaft [illegible] egg. It is 1.6 in. long and is [illegible]

(4) Lance or spear needle. [illegible] is used in chronic diseases where [illegible]

(5) Stiletto needle. It is [illegible] a sword blade. Used in chronic [illegible]

(6) Round sharp needle. It [illegible] and paralysis.

(7) Long 'soft pain' needle. It [illegible] Used in treatment of pain, paralysis [illegible] It is used cold.

(8) Long needle. It is [illegible] pain in joints and lumbar spine.

(9) Fine needle. It is [illegible] in swellings and to drain away pus.

Except when heated, [illegible] aseptic precautions are taken.

This ancient art of acupuncture is still widely practised among the Chinese. Many of its practitioners, however, are quite [illegible] are deeply versed in its theory and have a scientific knowledge.

A familiar figure to many naval officers serving in [illegible] is a little dwarf attending who holds an acupuncture [illegible] the invalid's ankle. On one occasion a patient presented himself complaining of pain in the knee. The little doctor, selecting one of several [illegible] needles which he held in his mouth, palpated the knee to find the most tender spot and then thrust the needle sharply in to the depth of an inch or more. A few days later the patient hobbled into the out-patient department of the mission hospital with an acute purulent arthritis.

## THE CUSTOMS AND CAMELS OF THE SEA

[illegible] which under Providence of God, the wealth [illegible] of the kingdom [illegible] is an integral part of the [illegible] of many outstanding and as such has many [illegible] which [illegible] time are almost tantamount [illegible]

[illegible] the Cinque Ports is the last [illegible] plant of the Buscarles or [illegible] of Anglo Saxon times [illegible] tell to fight the Danish [illegible] Here then we see the origin of the Navy—a force founded [illegible] our coasts When William the Conqueror came to the throne [illegible] certain privileges to the Cinque Ports in return for the [illegible] to provide fifty seven ships each carrying twenty four men [illegible] were compelled to serve for fifteen days in times of necessity This [illegible] could be extended—and was so extended on occasions [illegible] to the accompaniment of many a grouse (or grumble) on the part [illegible] Buscarles, for however much seamen have changed during the [illegible] of the centuries, in one thing at least a whole-hearted delight in a [illegible] voiced in no uncertain terms they have remained the same

Each ship in the Cinque Ports force was commanded by a Batsuen (Middle English Boteswain) or husband and it is interesting to note in this connection that in the Merchant Service at the present day the person charged with the outfitting of the ship is still known as the ship's husband

The Buscarle got his name from the fact that he was a 'Busse' or man who served in a 'Busse' a particular type of Saxon ship, the name of which is perpetuated in the Herring Buss a type of sailing drifter still [illegible] on the East Coast Similarly the term Coxswain is descended from the name Cogswain he being the man who commanded a Cog a ship carrying thirty five men

It can thus be seen that the Navy has an historical background of upwards of a thousand years, and it is therefore quite natural that, the sea remaining unchanged and indeed changeless, many customs should have been handed down from those far distant times with but very slight alterations

The Navy of to day is governed by the King's Regulations and Admiralty Instructions a portentous tome that covers every possible eventuality based on the experience of centuries and being constantly brought up to date The origin of these regulations can be traced to the Laws of Oleron introduced into England by Richard I in the latter part of the twelfth century Oleron, the Ulmarus Insula of Pliny is an island off the Western Coast of France whence originated the mediæval code of

[illegible] the [illegible] W [illegible] A
[illegible] [illegible] ruled with [illegible]
were ruled by these [illegible] apparently to the [illegible]
monarch who adopted them for use in England [illegible]
Oleron was compiled The Black Book of the [illegible]
appeared at the end of the seventeenth century [illegible]
an ancient hand and in the ancient French [illegible]
contained ordinances dating from the reign of [illegible] III [illegible]
others added from time to time, and can quite rightly [illegible]
precursor of the modern King's Regulations

As proof of the antiquity of the naval service it is [illegible]
that in both the Regulations and the Naval Discipline Act there are
constant references to "the custom of the service" and "the custom of the
Service"

The older laws certainly did not err on the side of leniency [illegible]
punishments providing for the loss of a hand for wounding a superior,
tarring and feathering for theft dogging for almost any [illegible]
hauling and hanging at the yard arm These have now been modified,
the last recorded yard arm execution having taken place at Jamaica
in 1856 during the second China War It is hardly surprising that in
those bad old days it was difficult to obtain men for the Fleet and
criminals condemned to death preferred to undergo death by hanging
service in the Navy—an alternative that was occasionally offered
during the Napoleonic Wars The modern blue jacket [illegible]
life under conditions that his predecessors would have considered a
good imitation of heaven This life is modern to a degree [illegible]
but never a day passes without something cropping up that is a relic of the
past though he probably does not realize it As a rule [illegible]
salutes the quarter deck on stepping on to it This is a [illegible]
instance of a custom of the Service that is also a custom of the [illegible]

In the Middle Ages [illegible] from the very beginnings of the Navy and
continuing right up to the Reformation it was the custom for [illegible]
to carry a crucifix on the quarter deck to which every one [illegible]
hence the modern custom on board—a custom of the Service and not of
any body observed though very frequently without any thought as to [illegible]
which is far older than even the Naval service Even in Homeric [illegible]
it was the custom of the Greek sailors to every time they [illegible]
image of a god or goddess under the high curved stern [illegible]
which was reverently saluted and to which [illegible]
beginning of every voyage The Homeric [illegible] the [illegible]
seems probable that this custom goes back to the [illegible]
daring adventured forth on the waters to his first [illegible]

Mention of the high carved stern post of a ship brings to [illegible]
custom, viz. that of the captain of the quarterdeck [illegible]
dock gear with the letters AXLE If asked why he does [illegible]

[illegible] through [illegible] both these [illegible] both in the bow [illegible] enemy, as an old [illegible] that part of the ship [illegible] analogy with the [illegible] marked VALE. The [illegible] origin in the days when [illegible] now. Captains were then [illegible] and when the weather was [illegible] to permit the [illegible] the sea gangway they were [illegible] a bosun's chair [illegible] yardarm whip and hoisted out in the same [illegible]. The present call [illegible] the side is nearly the same as the call [illegible] hoisting and walking away and thus a purely utilitarian call has [illegible] ceremonial salute. On the other hand the Boatswain's pipe [illegible] to pass orders was at one time a badge of rank, worn by the Lord High Admiral, and known as the Whistle of Honour. So important [illegible] that when Sir Edward Howard, Lord High Admiral, was [illegible] by the French off Brest in 1513 he, seeing that capture was [illegible] his Lord High Admiral's whistle into the sea.

[illegible] in commission always wears a pennant at the masthead. This [illegible] considered to have originated with Blake's whip [illegible] popular song. Pennants were, however, in use long [illegible] been authorized in the middle of the fourteenth [illegible] to have to say so, but in all probability Blake's [illegible].

[illegible] is the "paying off pennant," flown [illegible] a commission. This is much easier to see than the [illegible] a length of pennant of one foot for [illegible]. A ship leaving a foreign station to come home [illegible] send off, being played out of harbour [illegible] in the breeze complete with a bladder [illegible] into the sea [illegible].

The daily evening parade of the hands aboard, known as evening [illegible], is a very old custom which had its origin in the days when wars [illegible] were always with us. Its purpose was to make certain that [illegible] was ready for a night action. Even to-day the bugle call for [illegible] is identical with that for general quarters (or action) [illegible] for the [illegible] sounded—a subtle reminder that the real [illegible] of the Navy is to be ready for action at any moment.

[illegible] the most cherished privileges and customs of the Navy is the [illegible] to drink the health of the Sovereign. It is difficult to say [illegible] was granted. There are two occasions quoted as having given [illegible] the first being when Charles II, returning to England in the *Naseby*, [illegible] *Royal Charles*, in 1660 bumped his head when rising to a

[illegible] IV, wh[illegible] title [illegible] Hon Visitors

[illegible] of congratu[illegible] views of Whi[illegible] ugh the Dual [illegible] t the event [illegible] Hon [illegible] tractive [illegible] r and whi[illegible] a great [illegible] to the Dual [illegible] ging in t[illegible] ular dress It [illegible] um unfit [illegible] inform that th[illegible] ith the [illegible] fitness

## Clinical Notes

### THE TREATMENT OF THYROTOXICOSIS

By Mr C P G Wakeley F R C S

On October 5th 1916 the first meeting of the Winter Session [illegible] Medical Society in R N Hospital Chatham

Surgeon Rear Admiral B Pakeley Pickerings in the chair and in addition to the Medical Officers of the Hospital and many from the establishment the Port [illegible] number of civilian practitioners from the neighbourhood were present by invitation

Mr C P G Wakeley gave a most interesting lantern demonstration and lecture on the Treatment of Thyrotoxicosis

He began by discussing the etiology of the condition pointing out that [illegible] incidence occurred [illegible] times out of [illegible] cases of goitre in girls and instanced such a case in a girl who was another [illegible] Immediately stress sheet 1911 and [illegible] evidence all pointed to contraception and conception as [illegible] agent in the disease

He then went on to distinguish briefly between primary and secondary thyrotoxicosis pointing out the theory that while the primary form may be due to an abnormal secretion in the gland the secondary may be due to [illegible] normal secretion

He pointed out that the technical difficulty of estimating the basic metabolic rate with sufficient accuracy in estimation of the degree of disease present [illegible] recommended [illegible] on clinical findings

By lantern slides of [illegible] photographs many degrees of hyperplasia in the gland were illustrated which also showed [illegible] to other tissues and [illegible] the [illegible] appearance of [illegible] before and after operation

He said that in many cases [illegible] examination revealed more than disease than could be [illegible] of the gland itself suggested

The [illegible] of [illegible] set too after operation as well as before [illegible] emphasized

Turning to the technique of Thyroidectomy Mr Wakeley said that [illegible]

—so complet[illegible] the procedure should be [illegible] The operation is usually [illegible] of course [illegible] demonstrat[illegible] the main steps [illegible] the procedure. [illegible] note of thanks to Mr. Walsh [illegible] by the Surg[illegible] presided with [illegible] lecture on spring, three fro[illegible] gave them so [illegible] and [illegible] ing the [illegible] of the audience [illegible] any would turn up at [illegible] meetings during the winter [illegible] steadily increasing, clinical material in the hospital would [illegible]

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## A CASE OF ACUTE ASEPTIC MENINGITIS

[illegible] ION COMMANDER J. H. GAUSSEN, M.B., Ch.B., R.N.

The patient, a Stoker aged 18, reported sick on shore on September 28, 1935, and was [illegible]ght to R.N. Barracks Sick Quarters. He complained of severe frontal [illegible] of four days' duration on June 27. He was seen by the Ophthalmic Specialist, but nothing abnormal was found. During that night he [illegible] several times and had intense headache. Temperature 101° F., pulse 64. Was seen in Barracks on fluid diet; he vomited twice, the vomiting being projectile in nature. He was discharged to R.N. Hospital, Plymouth, on September [illegible]

*Family History.*—Nil relevant.

*Previous History.*—Bronchial catarrh, 1930.

On admission temperature 100.2° F., pulse 62, respiration 18. He complained [illegible] frontal headache which tended to radiate through from the parietal [illegible] occipital region; he vomited during examination. The case was considered [illegible]

Examination showed:—

Eyes: Dilated, eyes watery, photophobia present. No rash.

[illegible] very furred and moist.

[illegible] injected.

[illegible] normal.

[illegible] A few scattered sonorous rules over both lungs.

[illegible] normal.

Central Nervous System: Pupils somewhat dilated, equal, central, react to [illegible] accommodation. No paralysis or paresis.

Superficial and deep reflexes present, brisk and equal. No pain, stiffness or [illegible] of the neck; no retraction of head or abdomen; Kernig's sign absent; [illegible] sign absent. He was given cod, bicarb. and compral for the [illegible]

29. He vomited twice during the night but had some disturbed [illegible] the morning, he complained of severe frontal headache, was restless [illegible] retraction. Kernig's sign absent; slow full pulse; some photo[illegible] Temperature 99.6° F., pulse 58.

[illegible] puncture. About 10 c.c. of clear cerebrospinal fluid removed under [illegible] pressure.

*Fluid.* Cells 32 per c.mm., polymorphs 16 per cent., [illegible] per cent.

[illegible] per 100 c.c.

[illegible] slight increase.

Colloidal gold: Meningitic response 0 0 1 2 3, 3 3 2 2 0.

[illegible] Depo[illegible]

Wassermann Reac[illegible]

Blood Leucocyte[illegible] band[illegible] nuclear polymorphs[illegible] mononuclear[illegible]

Urine No pathological sediment

September 29 Temperature 99 8 F[illegible] probably improved after lumbar puncture and puncture[illegible] when he vomited again and headache returned

M[illegible] Patient restless and complained of severe frontal headache some retraction of head but otherwise physical signs were negative

Lumbar puncture again performed and 20 c c of clear cerebrospinal fluid removed under increased pressure This relieved the restlessness and altered comical pupils settled down

September 30 Tubercular meningitis suspected but neither in centrifuged fluid nor by culture could the tubercle bacilli be demonstrated A provisional diagnosis of severe migraine was made

18 00 Temperature 100 4° F pulse 58 Headache still severe but no neck rigidity Mag sulph (25 per cent) enemas being given

23 00 Restless Morphia ¼ gr given

October 1 Morning temperature 99 4 F pulse 48 Slept well feel generally better No vomiting

*Examination by Ophthalmic Specialist* —Fundi The margins of both discs are blurred and the physiological cup is lost on both sides No exudates or haemorrhages are seen The retinal veins near the disc are dilated and tortuous

*Conclusion* —Early papilloedema—typical on both sides

*Examination by E N T Specialist* — The Auditory meatus contained wax and a little epithelium only Drums intact and not bulging Hearing acute No history of any ear disease No pus or tenderness referable to the ears in front of sinuses No ear disease present

Constipation was obstinate in spite of mag sulph enemas but a good result was obtained in the evening by turpentine enema

Patient generally quieter but morphia ¼ gr was again necessary at 22 00 Evening temperature 100 6° F pulse 48

October 2 Morning temperature 99 1° F pulse 56 Slight general improvement, tongue cleaning No further vomiting headache less severe

18 00 Temperature 100 F Recurrence of headache little general change Morphia ¼ gr given 22 30

October 3 Morning temperature 99 4° F pulse 52 General improvement and no deterioration present but towards the evening headache returned

18 00 Evening temperature 99 8 F pulse 52 and a further lumbar puncture performed 17 c c of clear cerebrospinal fluid under slight pressure only

*Laboratory Report on Cerebrospinal Fluid* —17 c c clear fluid cells 21 per c mm protein 40 mg per 100 c c globulin very slight increase No tubercle bacilli found

October 4 Morning temperature normal pulse 60 Passed a good night morphia not required No vomiting Marked improvement

From this time patient had no further headache and rapidly became convalescent

On October 8 Ophthalmic Specialist reported The disc margins are still blurred especially on superior edges There is slightly less congestion of the retinal vessels The haemorrhages in small haemorrhage is present immediately to temporal side of the right disc

Patient was allowed up for two hours on October 10 and had no reaction

*X Ray Chest* — No infiltration of the parenchyma of the lungs shown Lung hilus appear generally streaky and catarrhal and some glands to bilat

[illegible] abnormality [illegible]
[illegible] vision, [illegible]
given prescription [illegible]

[illegible] trick appears to [illegible]
[illegible] for an exhibition [illegible]
[illegible]
further [illegible] has occurred [illegible]

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## A CASE OF [illegible]

By [illegible] Lieutenant [illegible]

While [illegible] between Calabar and [illegible] having a [illegible] on [illegible] Africa Coast a rating reported [illegible] Bay complaining of a [illegible] neck. This swelling was [illegible] and [illegible] the [illegible] of a deep red colour. [illegible] the [illegible] and treated it [illegible] On the second day I decided that [illegible] object [illegible] had [illegible] structure I discovered the [illegible] the Jumbo fly *Tabanus* [illegible] swelling.

[illegible] the same rating [illegible] with a further swelling on the [illegible] just [illegible] external malleolus. My diagnosis in this case was [illegible] also contained [illegible] a [illegible] [illegible] rapidly and without signs. The swellings in each case [illegible] diameter and a dusky red in colour the red extending in [illegible] surrounding area.

[illegible] is very prevalent on the coast of the Gulf of Guinea.

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## FRACTURE DISLOCATION OF THE FIRST METACARPAL BONE (BENNETT'S FRACTURE)

By Surgeon Commander R. A. Brown, M.B., Ch.B., R.N.

[illegible] common fracture. It occurs in the Service as the result of an injury [illegible]. It is also caused by a fall on the adducted thumb. It has often



[illegible] of the [illegible] of the thumb. If unrecognized it leads [illegible]. All the movements of the thumb originate around the

[illegible]



[illegible]

through the pulp of the thumb. The ends of the wire are passed through two holes of a small metal plate. A flexible splint is then applied posteriorly from the elbow to the finger-tips, and the ring is bent round the base of the thumb. The proximal phalanx of the affected metacarpal bone is pressed back into position by means of the plaster. The plaster extends to the thumb-base and is well moulded over the projection. There is less possibility of the dislocation of the phalanx with this form of splint. In the simpler type of case no further treatment is required. If extension is withdrawn from the pulp of the thumb the plaster-strapping [illegible] daily movements of the other fingers must be commenced at once.

[redacted] from [redacted] wi[redacted] from well [redacted] the [redacted] thr[redacted] for three [redacted] hrs. The splint [redacted] the original plast[redacted] held in posit[redacted] by a plaster band[redacted] tures through the [redacted] meh[redacted] to the end of the sp[redacted] the thumb, to th[redacted] Lung thus applied The amou[redacted] must depend on [redacted] future dislocatio[redacted] As in the [redacted] tion should be [redacted] with movements of the [redacted] fingers commencing [redacted]

At the end of one month the plaster and traction [redacted] removed and active and passive [redacted] ments of the thumb begun

An x-ray must be taken immediately following reduction Local anæsthesia at the site of fracture is all that is required for reduction and treatment

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## A CASE OF PERFORATED DUODENAL ULCER COMPLICATED BY INTESTINAL OBSTRUCTION

By Surg Capt James T Middleton R.N.

This patient (an Able Seaman) was admitted on April 6 1934 with severe abdominal pain which had commenced that morning.

He gave a history of previous gastric trouble the last being in 1931. The appendix had been removed.

*On Admission.*—Very distressed and in severe abdominal pain which was in upper half of abdomen. Palpation revealed board like rigidity and tenderness in all areas especially over epigastrium. He vomited on admission.

Laparotomy was performed immediately and a perforated duodenal ulcer was found. Perforation was closed by one through and through suture and a row of fine Lembert sutures over it. Stab wound made below umbilicus and a tube inserted into pelvis.

He made satisfactory progress until April 12 1934 when he commenced vomiting, dark coloured liquid became restless and complained of dull aching pain in abdomen. Vomiting continued intermittently during the next few days and he also had some hiccough. He was given neutral chlorine 0.1 gram every two hours for six doses but without any result.

When being dressed on the 14th a coil of intestine could be seen moving [redacted] stranded to the site of the stab wound and then could not get beyond [redacted] for intestinal obstruction was performed that afternoon when it was found that the transverse colon and omentum were very firmly adherent to the [redacted] of the stab wound below the umbilicus. Springing from the transverse colon was a large like process which was very inflamed and had attached itself to the [redacted] or surface of mesentery of small gut—fleshy attachment and difficult to separate. The small gut was kinked by it as it was adherent in this loop and adhesions had to be separated. The process removed from transverse colon did not appear to be a piece of rolled omentum as it had a lumen and when looked very like a Fallopian membrane. There was no free fluid in peritoneal cavity and the two layers of intestinal sutures appeared all right.

*Pathology of Process removed from Transverse Colon.*—Specimen is a cylindrical structure with a lumen 2 to 3 m.m. across. The innermost layer of the wall is grossly infiltrated with inflammatory cells mostly polymorphs. Outside this is a fibrous layer still considerably inflamed. The outermost layer is a loose fatty and fibrous tissue much less inflamed and containing numerous blood vessels. It might possibly be a thrombosed and suppurated vein but this is merely a conjecture.

[illegible] tory progress [illegible] He was given [illegible] four doses. The [illegible] still [illegible] day a [illegible] was [illegible] good result [illegible]

On April 27 vomiting [illegible] again [illegible] cough. He [illegible] Later in the [illegible] The [illegible] small [illegible] between [illegible] A large tube [illegible] pictures [illegible]

He made a good recovery [illegible] for the next [illegible] fairly satisfactory [illegible] to have [illegible] the next few [illegible] small amount of food [illegible] Although the vomiting [illegible] the next week [illegible] distressed.

On May 1 he was not so well [illegible] He was also [illegible] red cells per [illegible] 4,500,000; white cells 10,400 [illegible] 90 per cent; colour index [illegible] was given a tonic for this.

From that time he made good progress [illegible] cell count on May [illegible] 5,500,000 and on May 20 he [illegible] end of another week he was allowed [illegible] His condition was [illegible] improved by June 8 that he was allowed [illegible] walk and [illegible]

On July 10 blood count was [illegible] 5,520,000 [illegible] 9,600; hæmoglobin 80 per cent [illegible]

*X-Ray Report*—*Barium Meal*, July 13 [illegible] mal shape with very slight degree of [illegible] There was still an [illegible] stomach after eight hours though [illegible] finitely seen and was small [illegible] filling defect during screening [illegible] some barium remained in [illegible] probably being passed at intervals from the stomach [illegible] of meal was in sigmoid, the remainder being [illegible] pletely empty."

He was eventually discharged to sick [illegible] 27. He had no dyspepsia or discomfort of any kind [illegible] healed, no signs of an incisional hernia, and he had [illegible] in weight in less than two months.

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## A CASE OF OPTIC NEURITIS CAUSED BY [illegible] SINUSITIS

By Surgeon Commander [illegible]

D. W. C. A. B., aged 24.

This patient was admitted to the R.N. Hospital, Chatham, on [illegible] having been under observation since January 13 with double retrobulbar neuritis which developed suddenly on January 8, considered to be [illegible]

[illegible] neg[illegible]

[illegible] both [illegible] through the [illegible] segment of the [illegible] diagnosis [illegible] months sequel [illegible] under [illegible] anterior wall of both [illegible] removed [illegible] left sphenoidal [illegible] again [illegible] [illegible]

Following [illegible] slightly for a time but then [illegible] on May 22, 19[illegible]. The interest [illegible] its apparent localization to the [illegible] of [illegible] point upon this [illegible] [illegible] blindness

## [illegible] OTITIS MEDIA

[illegible]

W. H. A. [illegible]

[illegible] with hæmorrhagic tendency to [illegible]

He was ad[illegible] symptoms and double otitis media on February [illegible] discharge [illegible] blood stained and [illegible] epistaxis. The temperature chart was septicæmic in type [illegible] were organisms cultured in the blood. The aural con[illegible] down but hæmorrhage developed in the intestinal tract [illegible] continued despite all efforts to check it, with gradually dim[illegible] and a very poor reticulocytosis. By February 28 the red [illegible] 1 600 000. Both ears continued to discharge but there [illegible] signs in either ear and the patient was in no fit state [illegible] without very definite indications.

The condit[illegible] to improve with a better blood count and the aural con[illegible] but in the evening of March 11 there was a sudden [illegible] with symptoms of meningism and infection was practically localized [illegible] right ear. The red blood count was now 2 850 000. That evening [illegible] operation was performed, free pus and necrotic bone being [illegible] blood transfusion being given; this had been advised against [illegible] of the possible disturbance to circulation.

Progress following the operation was slow but normal and he returned to duty on June 13, 19[illegible].

*Culture from* [illegible] — [illegible] unusual type of streptococcus, growing in opaque circular [illegible]

The case is interesting [illegible] the only one during the year which showed these hæmorrhagic symptoms [illegible] the good fortune that at the period when operation would [illegible] great risk the ears remained quiescent, and as soon as the general [illegible] the acute aural condition located itself to one side [illegible] could be undertaken successfully.

## [illegible] RESULTS [illegible]

[illegible] NICHOLS [illegible]

[illegible]

T[illegible] aft[illegible] with[illegible] The[illegible] in th[illegible] occa[illegible] was[illegible] 10[illegible]

Blood [illegible] on July 26 [illegible] being removed [illegible] On August [illegible] no organisms were found.

Progress was slow but [illegible] remained [illegible] dilated and [illegible] gargling [illegible]

Patient was invalided on [illegible]

The interest in this [illegible] operation although [illegible] infection which at first appeared [illegible] undoubted rheumat[illegible]

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# Reviews.

REPORT OF THE HEALTH OF THE NAVY FOR THE YEAR 19[illegible] London: H.M. Stationery Office 193[illegible] Price 2s. 6d. [illegible]

The "Health of the Navy" constitutes a Report [illegible] it a condensation of the information rendered by Medical [illegible] in their Journals and Nosological Returns and of the [illegible] Reports from the Royal Naval Hospitals and [illegible] shore establishments [illegible] little implied before the present issue [illegible] of us, at any rate—are very difficult things [illegible] atmosphere of bewilderment or [illegible] is that this Report is not intended only for the [illegible] Naval Medical Service nor indeed for the medical profession [illegible] primarily for the information of Members of Parliament and the general public.

Some years ago until the "Blue Book" [illegible] and condensed it was stated [illegible] Majesty's Command" and "Ordered by [illegible] and it is emphasised in the Report for the year 19[illegible] *[illegible] of the Service.*

It is for these reasons that the task of the reviewer [illegible] confines himself to a slavish [illegible] of the various Tables showing [illegible] per 1,000 of cases [illegible] and deaths [illegible] and of the other statistical tables.

But this method is superfluous in a Service Journal for all [illegible] have the opportunity of studying the statistics for themselves and [illegible] own conclusions from them.

[illegible] or should one say of the [illegible]
[illegible] two years offers perhaps [illegible]
[illegible] wind has been taken [illegible]
[illegible] who hides his light under the [illegible]
[illegible] to the October 1936 [illegible]
[illegible] with illuminating [illegible]
[illegible] which have taken place since 1906 The
[illegible] of the identity of this medium but would
[illegible] which is evoked for future communications

[illegible] this, the first occasion on which this
[illegible] the Report the death ratio of the Total
[illegible] that there is a distinct increase both
[illegible] The greater part of the Blue Book are
[illegible] although it is hoped to use a working abbreviation, this
[illegible] in primarily furnished But example let us take the section
[illegible] the Digestive System no less than 7 275 cases are returned
[illegible] with 5 787 in 1933 2 917 in 1924, 11,691 in 1909
[illegible] Total Force was nearly 30 000 greater than in 1934) and with 6,690
[illegible] ago the Total Force then being 13 000

[illegible] figures have recently led to [illegible] and well informed [illegible] news
[illegible] notice in the Report that "Indigestion is on the increase
[illegible] of the digestive system must surely mean "indigestion" But when
[illegible] trouble to refer to the Table on page 12 we find that well over half
[illegible] recorded (3 308) are those of tonsillitis which it seems to the writer
[illegible] returned under the heading of Diseases caused by Infection.
[illegible] with that arch enemy of mankind the hæmolytic streptococcus
[illegible] which accordiog to modern opinion is due to infection with the
[illegible] already included in the category 336 cases of hernia are also
[illegible] Diseases of the Digestive System and it seems definitely unfair
[illegible] to blame the digestive system for the troubles forced upon it
[illegible] by micro organisms on the one hand and by anatomical anomalies on
[illegible] But these are difficulties which can be overcome only by applying
[illegible] advances in knowledge and a more scientific system of classification and
[illegible] mentioned because of their misleading effect on the lay mind

[illegible] remarks on Diseases of the Digestive System occurring on the
Mediterranean Station in the year 1881 one reads that *cynanche* diarrhœa
and dyspepsia as usual furnish the largest numbers to this class The writer
who has "learnt Latin and less Greek" was intrigued to discover that
*cynanche* appears to be derived from the Greek *κυων* and *αγχω* literally a
"dog gripping" or sore throat'

The sections on 'Remarks on Diseases' and on the activities of the Special
Departments comprising 32 pages are fuller than usual and are of extreme
interest The importance of a thorough working knowledge of tropical medicine
for Medical Officers of the Royal Navy is illustrated by the fact that cases of
malaria malignant fever beri beri, dysentery dengue fever, leishmaniasis schisto
so mania typhus and even a case of infection in the case of a native Cantonese
serving in a Royal Fleet Auxiliary vessel with the rare vegetable parasite
*Blastocystis hominis* are recorded Cases of malaria show an increase of forty
five over the total for 1934 a comparatively insignificant change At the present
time when opinion is so much divided as to the value of modern synthetic drugs
in the treatment of malaria and as to their superiority or otherwise over quinine
it is interesting to read that the course of treatment adopted at the R N Hospital

Hoog Koo[illegible] single source of [illegible] five [illegible] follo[illegible] necessary by [illegible] days' course of plasmoquine a[illegible] was [illegible] superior to [illegible] therapy from the point of view of [illegible] and relapse rate

Of great interest is the *precis* of an account of [illegible] twelve rabbits with *Bilharzia japonicum* in a ship stationed [illegible] the original article published in this Journal [?] should be [illegible] Officers appointed to the China Station

*Small pox*.—It is rather alarming to read that [illegible] with one death were recorded especially as all patients but [illegible] during the previous six to twenty four months The method of [illegible] the source of the lymph employed is not mentioned

*Enteric Group*.—It is very satisfactory to see that [illegible] with no rowdings and no deaths were recorded This is a striking [illegible] to the value of the anti typhoid inoculation routine at present [illegible]

*Meningococcal Infection*.—Of the thirty three cases [illegible] thirteen were fatal[illegible] and it is noted that three [illegible] may be questioned whether these should be included [illegible] Meningococcal *Infection* but after all, in a comprehensive [illegible] to no point in making too fine distinctions The case recorded [illegible] who sustained a fracture of his skull and five days later developed [illegible] due to *Neisseria meningitidis* of which organism he was presumably a [illegible] is very interesting Buddes mother M to the Mole and M[illegible] ably only those officers on the surgical side of our Naval Hospitals [illegible] the Treasury and Insurance Companies, fully realize the [illegible] to the Service due to the inefficient driving of these instruments of precision and the potential danger in incompetent hands

*Undulant Fever*.—Only twelve cases were reported [illegible] in the Mediterranean Station with the exception of [illegible] It is not stated whether the infecting organism in these cases is [illegible] *abortus*

*Special Departments*. *Hygiene*.—The purity of the [illegible] Service both for drinking purposes and for swimming baths [illegible] constant observation or supervision Where necessary [illegible] have been introduced and certain structural improvements [illegible] some of the swimming baths

The value of Dick testing and immunization [illegible] is now attested in the fact that since February, 1933, when the [illegible] at the Royal Naval College Dartmouth not a single case [illegible] has occurred Eight cases only of this disease were reported [illegible] (Boys Training Establishment) but during the period of the [illegible] less than 120 cases of sore throat apparently due to [illegible] streptococci occurred, tending to confirm the undesirability [illegible] tonsils in the presence of tonsillitis, scarlet fever and acute [illegible] This opinion is further supported by the reports from the R.N. Hospitals at Bighi [illegible] of 447 cases of the so called 'common cold' at the [illegible] tonsillitis at this latter apparently due to the same organism

*Pathology*.—Pathology is the father and mother of [illegible] silent branch of the whole service, the work of the laboratory [illegible] really without comment and the reviewer in this [illegible] to the statistics and the brief notes appended to them [illegible]

*Surgery*.—The high standard of this branch is [illegible] operations as nephrotomy, prostatectomy, cholecystectomy [illegible] *quite frequently*. We [illegible] however that the necessity for the [illegible] prostate must surely be unusual except in the cases of [illegible]

actual figures would be a more useful information than a general statement

The remarks on [illegible] are included in this section [illegible] hope that in future the special [illegible] will be recorded in sections devoted [illegible]

*Medicine*.—With the exception of the incidence [illegible] epidemic cerebro-spinal diseases already noted there is no detailed description of the [illegible] type of fractional encephalography adopted [illegible] there is little to be found in this section

In conclusion although [illegible] Health of the Navy [illegible] to be a best seller it deserves to be [illegible] thoroughly and systematically by all Medical Officers in the Navy and [illegible] Some books are to be tasted others to be swallowed and some [illegible] be chewed and digested The Report on the Health of the Navy for the Year 1934 is definitely included in the last category

REFERENCES

[1] *Ibid* [illegible] Medical Service October 1936 p 308
[2] *Ibid* [illegible]

MALARIA IN CEYLON An Enquiry into its Causes By C L Dunn C I E D P H late Director of Public Health and Director of Medical Services and Director of Public Health United Provinces India 1936 Pp 87 with 1 maps and 4 graphs London Baillière Tindall and Cox Price 6s

Those of us who have served in the Indian Medical Service are familiar with the island of Ceylon either as a stopping place on the voyage to India For the sailor from a Persian Gulf sloop-of-war it may be a welcome relief by a sojourn on the arid Arabian coast the island has served a purpose To nearly the great variety and choice of climate throughout the relatively small area has been an additional attraction In the coolness and freshness of the hills on hot tropical sunny days, or in a heavy downpour of rain during the monsoon Ceylon has always pleased by reason of this variability This climatic variation is of interest when we study the great epidemic of malaria which visited the island in 1934 and 1935, in which 100 000 people perished

Colonel Dunn in his review of this epidemic, commences with a brief survey of the geographical and climatic features of Ceylon The island which lies north to south in its long axis has a large mass of mountains in the southern portion These mountains rise to 8 000 ft and run down to the sea on the south west broken by gorges, ravines and river channels the remainder of the island to the north and east being more or less flat The island is visited by two monsoons during the year one from the north east and one from the south west Owing to the position of the mountains the south-western quadrant of the island receives a heavy rain supply from both monsoons, whereas the remainder of the island has a limited supply from the north east monsoon alone Ceylon may accordingly be divided into two climatic zones, the wet and the dry In the wet zone, the rainfall is heavy and is well distributed throughout the year, and one might think that the wet paddy fields, rivers and luxuriant vegetation would form an excellent background for the development of malaria Malaria however, is not common in this area, owing to the constant flooding of the breeding grounds reducing the chances of development of the mosquito to a minimum and although it comprises less than half of the total area of the island, this wet zone is prosperous, and supports over half of the whole population In the dry zone rainfall is not heavy and we find slowly drying swamps and trickling streams, with a sturdy, endemic-enriched and malaria ridden people

Many of us have seen the remains of the ancient civilization of Ceylon at Anuradhapura and we may well believe that the desertion and depopulation of the northern part of the island was largely due to malaria This may have been

primarily due to the importation of malaria [illegible] Ceylon believes have been caused by the [illegible] of the [illegible] system of irrigation after most of the Singhalese inhabitants had succumbed in the repeated Tamil invasions, resulting in a previously [illegible] degree of malaria being aggravated to high endemic proportions.

The epidemic of 1931 to 1935 [illegible] in the south western quadrant, which is normally non malarious, the epidemic rate in the rest of the island being little altered. This was primarily due to the failure of the monsoons in 1934. During the drought the large [illegible] rivers became small trickles and many shallow pools were formed in the bed affording places for *Anopheles culicifacies* the only known mosquito in Ceylon capable of carrying malaria. There is ordinarily many gametocytes in persons probably mainly from infection in the northern part of the island [illegible] malarious mosquitoes soon became malarious. The [illegible] was thus set for the epidemic which commenced around the beginning of the [illegible] and in the spring of 1935 a large [illegible] An increased amount of malaria had been expected like the lack of rain but the dramatic and [illegible] rapid spread of the epidemic took the Medical Authorities by surprise.

These are the well known facts of the epidemic. Colonel [illegible] discusses some other interesting aspects of the malaria problem, the hyper susceptibility of the population [illegible] by the absence of malaria for several years and the lowering in the standard of living caused by the failure of crops through lack of rain. In the course of the [illegible] of a large number of cases of malignant tertian malaria by the presumption being that these were of the native [illegible] of the disease.

As far as the control and prevention of disease are concerned this enquiry deals with malaria in the mass rather than in units from the condition as we meet it in the Navy. We cannot draw the same conclusions because most of the cases occurred in scattered [illegible] population who were not under close medical supervision. Colonel Dimmock's [illegible] of a combination of quinine and plasmoquine [illegible] doses for short [illegible] in mass therapy but Sir Malcolm Watson in the [illegible] states that the most important thing which has emerged from this enquiry is the [illegible] position of quinine and thinks that the synthetic drugs are still in the [illegible] stage and should only be administered under [illegible] supervision. It appears to have been generally agreed that Atebrin is not safe as it has produced untoward symptoms in a large number of cases.

Recommendations are made for the prevention of epidemics in the future. These include mass therapy in the [illegible] of [illegible] hypothecaries and hospital medical officers education of the population by means of cinema films and radio talks and [illegible] to [illegible] and anti-mosquito work to be done both by the owners of estates and by the Government. Colonel Dimmock states that in the case of many dangerous [illegible] breeding grounds, although only temporary measures should be replaced by [illegible] with sluice gates to permit of weekly flushes. However it is [illegible] that one of the difficulties in Ceylon in the past has been the lack of powers of control [illegible] local bodies by the central Government Health Department.

We would be interested to know something about the effect of this epidemic on the personnel of the East Indies Squadron. The Health of the Navy for 1934 does not satisfy our curiosity very much in this respect and confines itself to the statement that 1934 was [illegible] only a malaria year in certain parts of the East Indies Station, eight [illegible] two more cases having appeared than in 1933.

This book will be of great interest to Naval Medical Officers who may be called upon to deal with malaria in many different parts of the world.

Thorn[illegible] Vol 53 1936 Supplement [illegible]
s[illegible] Tr[illegible]es Keppel Street London W C 1 [illegible]
Pr[illegible]

This volume contains the Medical and Sanitary reports from [illegible] Protectorates and Dependencies for the year 1934 summarized [illegible] the division of Epidemiology and Medical S[illegible] School of Hygiene and Tropical Medicine (University of London

It is a series of fifty three reports from the scattered British Colonial [illegible] the population of which is estimated at upwards of fifty millions of people

One cannot but admire the work being done by the Colonial Medical Services for nearly every variety of sickness and story of the fight against disease with limited funds and in spite of the taboos and superstitions of primitive and semi civilized peoples It is pleasing to read that everywhere there is at least the beginning of an interest in and friendly native populations for the white man's medical treatment especially in the field of Antenatal and Maternity work We note that malaria is almost pandemic and that rain after drought causes the severe flares up which we often sorrowfully hear about The end of 1934 saw the commencement of the terrible epidemic of Cerebro spinal fever which killed 80 000 in seven months During the year 1934 there were none of the three great enemies of mankind plague cholera and smallpox in epidemic form The increase in undulant fever in Malta is to be noted by all Naval Medical Officers

From this to the visit most of these outposts of Empire and this Bulletin excellently [illegible] the medical conditions ashore

## News of the Service

### ADMIRALTY ORDERS

**2687.—Dental Treatment—Reciprocal Arrangements between the Services**

(M.D.G. D.N.A. 9115/36 S.10.1496.)

[illegible] an initial adjustment it will be made between the Admiralty War Office and Air Ministry [illegible] of treatment afforded by the dental officers [illegible] ne been issued to personnel of either of the [illegible] Services provided the patient is entitled under existing regulations to receive the [illegible] at the public expense

A.F.O. 943/32 Section I paragraph C (ii) is cancelled

**2518.—Medical Stores for Service Afloat.**

(M.D.C. 4.5.35—9.10.1496.)

[illegible] medicaments to A.F.O. 1832 C 1 publication noted —

[illegible] Pill Stibe zenil tabs 1 inch size (large case)
6 tube stibe [illegible] size (small [illegible] case)
[illegible] guidi mist solid dose [illegible]
[illegible] Tube 1 (large case)
[illegible] drum 1 (large case)
[illegible] 2 (medium [illegible] case)
[illegible] drum " (small [illegible] case)
[illegible] No 1 (medium [illegible] case)
[illegible] [illegible] reduced to 1 No )

**2530.—Royal Navy Medical Club**

(M.D.1. 1172.36—1.10.1936.)

[illegible] been cancelled The next luncheon will take place on Friday 16th April, [illegible]

**2699.—The Gilbert Bloxe Medal for Medical Officers 1937 Report**
(D.W. 111/60/46 M.H.G. 086/136 23.10.1936.)

The award for 1937 of the Gilbert Blaxe Medal will be the new regulations prescribed by Article A.F.O. 2135/36 will be considered as a result of the competition under the General Regulations for conditions for the award hereby revoked. The Medical Department not later than 31st March 1937 containing a full and precise description of the supplied by all the necessary evidence.

**2616.—Weekly Reports by Naval Health Officers**
(M.H.1. 16689/36.—24.10.36.)

The weekly returns of visits and enquiries by Naval Health Officers called for by Regulations and Admiralty Instructions Art. 1381 (Religious and Appeals) XXII [illegible]

**2863.—Scale of Medicines &c. for the Service Afloat 1936**
(M.D.G. 4823/36.—24.11.36.)

The following alterations should be noted [illegible]

Add—(Current Contract Additional Dental Preparations)

Cettel Bottle 1 No. should be substituted for Cresol Antiseptic Lotion.

**2884.—Novatox Lucol Ammonelle**
(M.D.1. 11891/31 1.11.1931.)

It has been reported that bottles of Novatox Lucol Ammonelle which have been issued to ships have probably been many bottles of defective [illegible] Surgeons [illegible] Medical Officers have complained that the [illegible] the instructions contained in R.N. Medical Manual [illegible] the instructions contained with the [illegible] to the user. The [illegible] to be made for Lucol Ammonelle and Novatox Lucol Ammonelle [illegible]

**2883.—Eyesight Standards for Royal Marines**
(M.M.I.G. 410/36. 12.12.36.)

It has been decided that the Visual Standard for colour vision in the Royal Marines [illegible] Appendix to A.F.O. 1411/36 should be amended to read [illegible]

**2922.—Form M 173 Abolition**
(Sick 287/31 31.12.1936.)

The following Form has been abolished —

M.173 Roll of Surgeons for turns in

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## MARRIAGE

[illegible] Wallace Hill, M.B., Ch.B., R.N., youngest son of the late Rev. Christopher Robert Hill and Mrs. Hill, of Wallington, Surrey, to Margaret Colquhoun, only daughter of R.N., of Balfour, Mary Wallington, Surrey.

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## OBITUARY

Surgeon Rear-Admiral (Retired) Samuel Matthews, C.B., died on December 18th, 1936.

He was born at Devonport on 18th October, 1861, and was educated at Devonport High School and Caius College, Cambridge. He entered the Royal Navy as Surgeon in 1885, and retired with the rank of Surgeon Rear-Admiral on 18th October, 1921.

During the war he was employed in the early days of the war in the Royal Naval Hospital, Chatham, and later in charge of the Royal Naval Hospital, Haslar, from 1915 to 1919. He was appointed Surgeon to the King in 1918.

He married in 1891 Ethel Mary, daughter of the late Rev. Canon Kerkham, Vicar of St. Mary's, Devonport, and had a family of two sons and two daughters. His wife predeceased him in 1931. His eldest son, Surgeon Lieutenant-Commander R.N., died on active service in 1918. His second son, Surgeon Lieutenant-Commander R.N., died in 1919. His eldest daughter married Surgeon Rear-Admiral R.N., and his second daughter married Surgeon Captain R.N. His third daughter married Surgeon Captain R.N. His youngest daughter married Surgeon Captain R.N.

He was a member of the Royal Naval Hospital, Haslar, from 1915 to 1919. He was appointed Surgeon to the King in 1918.

He married in 1891 Ethel Mary, daughter of the late Rev. Canon Kerkham, Vicar of St. Mary's, Devonport, and had a family of two sons and two daughters. His wife predeceased him in 1931. His eldest son, Surgeon Lieutenant-Commander R.N., died on active service in 1918. His second son, Surgeon Lieutenant-Commander R.N., died in 1919. His eldest daughter married Surgeon Rear-Admiral R.N., and his second daughter married Surgeon Captain R.N. His third daughter married Surgeon Captain R.N. His youngest daughter married Surgeon Captain R.N.

[illegible] Surgeon [illegible]
[illegible] Prof of H[illegible]
[illegible] Lab[illegible]
Diplomat[illegible]
He w[illegible] d [illegible]
rank of [illegible]

## HONOUR

[illegible] ST DUNLOP Jr [illegible]

The King has [illegible] ve[illegible]ll to [illegible]nction th[illegible] [illegible]s appointm[illegible]
A Commi[illegible] S[illegible] Vice Admiral Sir Robert William Bard H[illegible]
L R C P M R C S [illegible] D C L

## DEGREES AND DIPLOMAS

Surgeon [illegible] Commander D L C [illegible] Dunelm M B Ch B F R C O [illegible] ...ranted
[illegible] of M[illegible] of Dublin University (Trinity College) [illegible] ...ber of the
[illegible] December 1, 1936.

## RETIREMENTS

Surgeon [illegible] Commander C R B[illegible] M B placed on retired list [illegible]
Surgeon Lieutenant K I Allan L R C P & S [illegible] October 14, 1936.
Surgeon Lieutenant S I Tallant L R C P & S ... withdrew November 28, 1936

## PROMOTIONS

[illegible] Commander (D) A Lowrey D P H J D S to be Acting Surgeon Captain (D)
[illegible]
[illegible] Commander D Duncan M B Ch B D P H to be Surgeon Commander
[illegible]
[illegible] Criminal del L V Barnes M R C S L R C P to be Surgeon
[illegible] 1936
[illegible] Commander R L C Proctor M D Ch B F R C P to be Surgeon
[illegible] 1936
[illegible] Commander (D) H J Lack L D S T H O [illegible] D S and C J
[illegible] Surgeon Commander (D) December 31 1936
[illegible] Bruce C D D de Tallandier M R C S L R C P to be Surgeon Lieutenant
[illegible] 1936
[illegible] A I Fleming L R C P & S to be Surgeon Lieutenant Commander
[illegible]

## APPOINTMENTS

*September*

[illegible] to be F T S Rudd M B B Ch F R C S Ed to H M Hospital Ship
[illegible]
[illegible] Commander I Ramson M B C *Hawkins* (and as F M O)
[illegible] Carlton M B B S to *Hood* J Ross M R C S L R C P to *Stork*

*October*

[illegible] to J A O Flynn M D B Ch D T M Ch to *Caledonia* (and as F M O
[illegible] in Hygiene)
[illegible] Commander J C Holmes, M D to R N Hospital Haslar (and as Specialist in
[illegible] L Ritchie M C M B Ch B to *Iron Duke* D H Kerr-Ion M B B Ch
[illegible] M O) J Hamilton M B B Ch [illegible] Tumor Unit for duty at Western Ophthalmic Hospital (Specialist) E R Serley M D C B H K to Singapore Naval Base (and as Specialist in Bacteriology) T I O Rankine M B B Ch to *Royal Oak* (and as Squadron M O)
Surgeon Commander (D) J L Edwards, L D S to R N Barracks Portsmouth
Surgeon Lieutenant Commander T S Osborne L R C P & S to H M Dockyard Portsmouth R Russell M B B Ch to *Icarus* E H Rampling L M & S A., to *Royal Sovereign* H D J Ball M B Ch B to *Royal Oak* (and as Ophthalmic Specialist)

[illegible]

Surgeon [illegible] Devonport.

[illegible]

Surgeon [illegible] Special [illegible]

Surgeon [illegible] F.R.C.P.&S. to *Dolphin* [illegible] G.U. Diseases [illegible]

Surgeon [illegible] to *Penelope* [illegible] to *Shropshire* [illegible]

Surgeon [illegible] R.N. Dockyard [illegible] to *Queen Elizabeth* [illegible] Miles, M.B., Ch.B. [illegible] Perkins, L.R.C.P.&S. [illegible]

[illegible]

Surgeon [illegible] Williams [illegible] Special [illegible] L.R.C.P.&S. [illegible] Royal Naval Barracks, Chatham [illegible]

Surgeon [illegible] to R.N. Barracks, Chatham.

Surgeon [illegible] A. P. C. Clark [illegible]

## ENTRIES

Surgeon Lieutenant [illegible] M.R.C.S., L.R.C.P. [illegible] entered as Surgeon Lieutenant [illegible] and appointed to R.N. Hospital, Haslar, for course of instruction [illegible]

Messrs. [illegible] M.B., Ch.B. [illegible] L.R.C.P. [illegible] C. J. P. Pearson, M.R.C.S.Ed., L.R.C.P. [illegible] M.R.C.S., L.R.C.P., and N. M. McArthur, M.D. [illegible] Short Service and appointed to R.N. Hospital, Haslar [illegible] 1936.

Messrs. H. C. Brewerton, L.D.S., R. D. [illegible] L.R.C.P.&S. [illegible] Pearse, L.D.S., entered as Surgeon Lieutenants [illegible] for Short Service, and appointed to R.N. Hospital, Haslar, for course of instruction, November [illegible] 1936.

Messrs. C. F. [illegible] L.D.S., and [illegible] entered as Surgeon Lieutenants [illegible] for Short Service, and appointed to R.N. Hospital, Haslar [illegible] of instruction [illegible] 1937.

## WARDMASTERS

### APPOINTMENTS

Commissioned Wardmaster [illegible] to R.N. Hospital, Chatham [illegible] Surgeon Rear Admiral, November [illegible] 1936.

### RETIREMENTS

Wardmaster Lieutenant W. G. Olver, M.B.E., M.S.M., placed on retired list [illegible] age regulation, November 9, 1936.

[illegible]

## ROYAL NAVAL VOLUNTEER RESERVE

### APPOINTMENTS

#### September

[illegible] der St G B D Grey M B B S F R C S to *Lysander* for
Surg [illegible] te r Commander P R G Lease, M R C S, H M C P, to *Ajax*
Surgeon [illegible] s D R Hoodfellow M R C S, L R C P, transferred from Last II Mersey Division [illegible] Mersey Division and attached to *Eaglet*
H J W de M B C B [illegible] ferred to Last II Mersey Division to Last II Mersey Division W E Pycraft M B [illegible] transh [illegible] Last II Mersey Division to Last I Mersey Division and attached to *Eaglet*
R T [illegible] apont M B [illegible] B to *St Vincent*
S F Cooke M B, Ch B, transferred from Last II Mersey Division to Last I Mersey Division and attached to *Eaglet*
Probationary Surgeon Lieutenant R M Hilldrith, M R C S, L R C P, to *Neptune*
Surgeon Sub Lieutenant W H Dal [illegible] te to R N Barracks Chatham

#### October

Surgeon Lieutenant-Commander T. [illegible] Thorcombe, M A, M D, to R N Barracks Portsmouth
W H Bull [illegible] M B, D P H, to R N Barracks Portsmouth
Surgeon [illegible] Lieutenant-Commanders D W Bayliffe M B, F R C S, to *Daly* [illegible] P [illegible] Lieutenant-Commander M R C S, L R C P, to Commission [illegible] F D Gray M B, M R C P, to R N Barracks Devonport
J H Jaffe M B, C B, transferred from Last II Severn Division to Last II Mersey Division
Surgeon Lieutenant-Commanders (D) W M Bull, L D S, to R N Barracks Chatham [illegible] e E D Selby, L D S, to R N Barracks Chatham
C H A Pidd, L D S, to *Daly* [illegible] Surgeon Lieutenant-Commander W Langhorne, M B, to R N Barracks Devonport
H H Lockyer, M B, B Ch, to R N Hospital Haslar
W H Cain, M B, M R C S, L R C P, to *Daly* [illegible]
A Griffith, M R C S, L R C P, transferred from Last II Severn Division to Last II Mersey Division
[illegible] h [illegible] Nutt, M R C S, L R C P, transferred from Last II Severn Division to Last II Severn Division

Lieutenant-Surgeon Lieutenants A. [illegible] Maddan, M B, Ch B, L R C S, to *Royal Oak*
V. [illegible] Healy, M B, B S, L R C P, to *Jackdaw*
B N Anderson, M B, Ch B, to *Ajax*

#### November

Surgeon Lieutenant-Commander D. [illegible] Goldfellow, M R C S, L R C P, to Commission [illegible] E G Thomas, retired [illegible] Last II Severn Division to Last II London Division
Surgeon Lieutenant-Commander [illegible] Ringdahl, M R C S, L R C P, to R N Barracks Chatham
W D Wallpole, M R C S, L R C P, [illegible] M S S A, to R N Barracks Devonport
H V Jones, to *Anchusa*
Probationary Surgeon Sub Lieutenant [illegible] Foster to *Hamadryas*

### PROMOTIONS

Surgeon Lieutenant to be Commander W J Payne, M B, Ch B, F R C S (Edin), to be Surgeon Commander (To rank) 1 D 36
Surgeon Lieutenant D R G Goldfellow, M R C S, L R C P, to be Surgeon Lieutenant-Commander September 1 D 36
Surgeon Lieutenant [illegible] McCullagh, M R C S, B A O, to be Surgeon Lieutenant-Commander September 1 D 36
Surgeon Lieutenant [illegible] Smythe, M B, Ch B, to be Surgeon Lieutenant-Commander September 24 1936
Surgeon Lieutenant-Commander R. H. [illegible] Ingmell, M B, B Ch, B A O, to be Surgeon Lieutenant-Commander October 28 1936
Surgeon Lieutenant (D) J. F. Bolitho, L D S, to be Surgeon Lieutenant-Commander (D) October 5 1936
Surgeon Lieutenant (D) [illegible] H Hallee, L D S, to be Surgeon Lieutenant-Commander (D) October 28 1936
Surgeon Lieutenant-Commander V. M. Milton-Taylor, L D S, to be Surgeon Lieutenant-Commander (D) November 8 1936
Probationary Surgeon Lieutenant G. L. Ross, B A, B Ch, confirmed as Surgeon Lieutenant October 22 1936

[illegible]

nbon—

Parkes [illegible]

CATIONS

[illegible] EMU CLUB

[illegible] guard, St [illegible]

[illegible] Burgess

[illegible] November 16

[illegible]

[illegible] Surgeon [illegible]

[illegible] Surgeon [illegible]

## QUEEN ALEXANDRA'S ROYAL NAVAL NURSING SERVICE

### PROMOTIONS

Miss Hilda Mary Mc[illegible] Director, retired as Principal Matron, 30 October, promoted to the Rank of Principal Matron, 31 October, and appointed to R.N. Hospital, Haslar, November 1, 1936.

### RETIREMENTS

Nursing Sister Miss E. H. Francis to Superintending Sister, and appointed to R.N. Hospital, Chatham, November 1, 1936.

### RESIGNATIONS

Superintending Sister Miss M. E. Hunt resigned, November 1, 1936.

## THE PARKES MEMORIAL PRIZE, 1936

Major J. F. W. Mackenzie, O.B.E., M.C., Royal Army Medical Corps, has been awarded the Parkes Memorial Prize for his investigations into the numerous obstacles encountered in the purification of water in the field, coupled with research carried out by him in connection with field supplies in India. By this work Major Mackenzie has achieved much in the advancement of military hygiene.

The Parkes Memorial Prize is awarded annually to the Officer who is considered by the Committee to have done most to promote the advancement of Naval or Military Hygiene by professional work. It is open for competition to Medical Officers of the Royal Naval, Military and Indian Armies with the exception of the Professors and Assistant Professors of the Royal Naval Medical College, Greenwich, and the Royal Army Medical College, London, during their term of office.

## R.N. HOSPITAL CHATHAM—MEMORIAL TO SIR JAMES PORTER

On Sunday, November 15, a memorial to the late Sir James Porter, Medical Director-General of the Navy, was unveiled in the Royal Naval Hospital, Chatham, by Surgeon-Rear-Admiral B. Lockwood Park, the Medical Officer in Charge.

The memorial, which consists of a bronze plaque, placed on the main hall staircase, both designed and executed by Mr. Eric Kennington, is the gift of Sir James Porter, K.C.B., K.C.M.G., LL.D. Aberdeen, C.B., M.D., M.A., F.R.C.P., Medical Director-General, Navy, 1908-1913, to whose enthusiasm for the profession and for the Navy this building, as well as




Among those present were —

The Commander-in-Chief Admiral Sir F R G R Evans KCB DSO and Lady Evans
Capt R J Bush RN CSO Medical Staff
Surgeon Rear Admiral (retd) Dudley OBE representing the Medical Directorate General of the Navy and Mrs Dudley
Miss B Porter-King
Mr and Mrs [illegible] Mc Kay daughter and grandchildren of the late Sir James Porter
Surgeon Rear Admiral (retd) W W Prew CBE (Ret) and Lady Prew
Surgeon Rear Admiral W W Keir CMG (Ret)
Surgeon Captain J Greenson and Mrs Greenson
Surgeon Captain H F K Stephens OBE and Mrs Stephens
Surgeon Captain C F C Sankey OBE and Mrs Sankey
Surgeon Captain J C Dunson and Mrs Dunson
Surgeon Captain H M Whelan and Mrs Whelan
Surgeon Captain [illegible] Holman, OBE and Mrs Holman
Surgeon Captain K H Jones (Rel) and Mrs Jones

[redacted]

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## NAVAL MEDICAL COMPASSIONATE FUND

[redacted]

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# Preparations, &c

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### LONDON MEDICAL EXHIBITION

New Hall, Royal Horticultural Society, Westminster, S.W.1
18 to 28 March 1930

The Burroughs Wellcome and Co. exhibit again bore evidence on every side of the scientific resource of the firm and the continuous research work carried out. Amongst recent products to which attention may be made are Surgical Russell Viper Venom, a standardized, and the most efficient hæmostatic available; Ryzamin B, which consists of the concentrated and purified vitamin content of rice polishings, having a potency of not less than fifty international units of Vitamin B per gramme; and Diethylol, Phenylethyl Esters of Selected Fraction of the acids of hydnocarpus oil introduced for the treatment of lupus vulgaris. The section devoted to insulin included a display illustrating stages in the manufacture of Wellcome Insulin, which is made with crystalline insulin of 100 per cent. purity. Lots of preparations occupied a prominent place and were represented by specimens of the recently discovered hæmostatic alkaloid and ergotoxine ethyl ester, which was isolated by Barger and Dale by Burroughs Wellcome and Co. This work was published by them in connection with their synthesis of the alkaloid, and crystalline glucoside isolated from the leaves of *Digitalis purpurea*. Included in the preparations of *Digitalis purpurea* were Digestin, a tablet containing the total glucosides of the leaf (physiologically standardized); Tablet Digitalis leaf and Wellcome Tincture of Digitalis. In addition to these standardized preparations such as Ryzamin B, Tablet Cantharis, Tablet Vaccine Anthrax, and Tablet Calcium, prominence was given to Kepler Cod Liver Oil with Malt Extract, which continues to meet the demand for a palatable natural vitamin A and D protective. A wide range of serological products was exhibited. These are prepared at the Wellcome Physiological Research Laboratories, Beckenham, Kent, and [illegible]

" Wellcome " Concentrated Diphtheria Antitoxin—Globulins " Diphtheria Prophylactics (four types are issued) " Wellcome " Concentrated Streptococcus Antitoxin (Scarlatina)—Globuline " Wellcome " Concentrated Staphylococcus Antitoxin—Globulins " Wellcome " Staphylococcus Toxoid for Active Immunization " Wellcome " Anti pneumococcus Sera " and preparations for carrying out Dick and Schick testing " Specimens of the wide range of " Tabloid " Medicine Chests and Cases and " Agla " Hypodermic Apparatus were an important feature of the exhibit

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## ACIGEN

This drug prepared by May and Baker is a combination of mandelic acid with hexamethylenetetramine ammonium biphosphate and flavouring agents presented in the form of granules

It is intended for oral administration in the treatment of urinary infection

Acigen serves to maintain the acidity of the urine and does away in most cases with the necessity for supplementary administration of ammonium chloride Mandelic acid is excreted unchanged in the urine and in order to ensure its sufficient concentration the fluid intake should be restricted to not more than 2 pints a day The acidity of the urine should be tested repeatedly throughout the course of treatment

Two teaspoonfuls (5 grm mandelic acid) should be taken in a small quantity of water four times a day immediately after meals Treatment should be continued in most cases for ten to fourteen days In cases showing resistance or relapse treatment may be resumed after an interval of ten days

Bottles of 10 oz granules price 10s per bottle (subject)

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# Notice.

## KING EDWARD VII CONVALESCENT HOME FOR OFFICERS AT OSBORNE

Osborne House East Cowes Isle of Wight formerly the royal home of Her Majesty the late Queen Victoria, was given to the nation by H M King Edward VII as a Convalescent Home for Officers

The house (which is situated on the Solent in an exceptionally beautiful park of 450 acres, was duly converted into a most delightful and commodious convalescent home for the reception of convalescent officers both serving and retired of the Royal Navy Royal Marines Army Royal Air Force Royal Indian Navy and Indian Army cadets of the aforementioned Services and under certain conditions, both serving and retired civil servants who owing to the nature of their duties have to serve abroad

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Massage diathermy ionization radiant heat ultra violet rays and all electro therapeutical treatments are provided at a charge normally of 2s 6d per week

The organization of the home, however, is such as to eliminate as far as practicable, the atmosphere of Service Discipline and it combines all the advantages of a first class convalescent home with those of a country club for

those p[illegible] the [illegible] the golf [illegible] all advantage [illegible]

Osborne [illegible] is about the [illegible] walk of the [illegible] the island [illegible] resident professional [illegible] courts [illegible] lawn, bowling green, badminton [illegible] and [illegible] bathing [illegible] in the estate [illegible] sloop [illegible] available [illegible] for yachtsmen and during the [illegible] the [illegible] Foxhounds meet four days a week and foot [illegible] hunt with the latter pack free of charge

Frequent entertainments, theatricals and [illegible] in the recreation room which is provided with [illegible] cinema A silence room is provided for those who [illegible]

Osborne also has its own motor car which [illegible] and from the railway station The car is available [illegible] a small charge Garage accommodation is available [illegible] own cars

The charges are very reasonable and are as follows:—

(*a*) Cadets and cadets subordinate officers [illegible] per day

(*b*) All other officers 6s per day

(*c*) Civil servants, 10s per day

For further particulars and booklet apply to the Hon[illegible] House East Cowes Isle of Wight

Telegraphic address 'Convalescent Cowes Telephone [illegible]

# Notices.

[redacted] Medical Officers to send in Original Papers on [redacted] personal experiences &c Items of news [redacted] the Naval Medical Service will be welcomed [redacted] at home and foreign stations

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## Original Articles.

### LYMPHOGRANULOMA INGUINALE WITH SPECIAL REFERENCE TO THE FRIEI TEST IN DIAGNOSIS AND THE USE OF FARIAN EMETIC IN TREATMENT

By Surgeon Lieutenant W J Forbes Gillo M D (Cantab) R N

#### Introduction

Inguinal adenopathy of an acute type is a common cause of invalidism in the Royal Navy and many of these cases last for months Its causation is by no means a constant one and the etiological factor in many of the cases recorded in even the immediate past has been held to be obscure As indicative of this, the statistical returns to be made from each ship or establishment merely require that they be classified as venereal or non venereal

The criteria on which the separation is made is bound to vary in individual cases, but it is safe to conclude that the common practice in a case where there is neither present nor history of penile sore and where urethral coitus is denied, is to record it as non-venereal The great majority of such cases occur amongst the personnel of ships on foreign service in tropical climates, and the association of ideas has been responsible in part for the evolution of the term 'Climatic Bubo' It will be shown presently that investigations in recent years have demonstrated these cases as comprising a separate identifiable disease and given the designation of Lymphogranuloma Inguinale

First of all, it would be well to consider the main varieties of inguinal bubo met with and give a brief definition of their principal features Leaving aside the few which are secondary to some obvious septic focus in the foot or leg the remainder may be divided conveniently into the following categories (*a*) Syphilitic bubo, (*b*) bubo secondary to a frank chancroidal sore (*c*) climatic bubo or lymphogranuloma inguinale

(Gonorrhœal buboes have been excluded from this survey, but it is necessary to explain their omission here; in the light of some recent observations that many of the so-called chronic gonorrhœal buboes may have belonged to class (c) above.)

The bubo of syphilitic origin is usually of a smooth painless character freely movable under the skin, and whether one or more glands be affected there is that rubber-like feel which has earned them the description of shotty. Their diagnosis is confirmed by the usual criteria of this disease or, if necessary, by finding the spirochæte in aspirated gland juice. These then, are fairly easily differentiated.

Clinical differentiation between the next two categories by an examination of the bubo *per se* is rarely possible, and in most cases the existence or otherwise of a penile sore is allowed to determine into which class they fall. All of them present the clinical picture of a painful swelling in the groin accompanied by constitutional symptoms in the shape of fever, malaise, lassitude and anorexia and in a very short time a marked loss of weight. The bubo is due to an adenitis and periadenitis infective in origin and in the majority of cases, progressive in nature. Especially so is this true of those belonging to the lymphogranuloma inguinale group in which the pathological process frequently spreads to the whole group of inguinal glands and the mass becomes fixed and adherent to the skin which takes on a characteristic purplish colour over it. A small percentage of cases may abort and resolution of the swelling and constitutional recovery of the patient may occur spontaneously, but far more commonly, the gland swelling tends to go on to softening and suppuration leading to protracted hospitalization.

Buboes as a whole receive scanty consideration in the clinical side of the average undergraduate's course and climatic bubo or lymphogranuloma inguinale probably escapes mention throughout for it is not an indigenous disease at home, and the only cases seen are generally in sailors returned from tropical ports. Yet it is not a new condition and has been described for half a century at least. Its initial designation of climatic is an anachronism in the face of the great mass of evidence which has accumulated to prove its infective origin—and further, of that infection having taken place during sexual intercourse.

Stannus has written a most comprehensive monograph [1] covering all aspects of the disease and as this is now accepted as the standard work on the subject it will be necessary to make several references to its pages.

In the preface to his book Stannus states his conviction that lymphogranuloma inguinale must now rank as a proved venereal disease. It will be well, however, to give a brief account of its emergence from the obscurity of an unknown ætiology.

During the latter half of the nineteenth century accounts began to appear in the French literature of cases seen in tropical countries and given the provisional designation of bubon d'emblée. [2] These cases of

inguinal bubo were believed to [illegible] which there had appeared no primary chancre [illegible] secondary manifestations. Some writers held [illegible] and others attributed them to some [illegible].

In view of the fact that this disease had been reported in detail [illegible] all Naval ratings, an article published by Fleet Surgeon C. G. Gobbin, Royal Navy, in 1896 [3] is of particular interest. Under the heading of "Non-Venereal Bubo" he reports on eleven cases of inguinal adenitis associated with severe constitutional symptoms, and the descriptions [illegible] essentially in every respect with the clinical picture of lymphogranuloma inguinale. He regarded the disease as essentially one to which Europeans resident in tropical countries, or serving in tropical climates, were subject and he considered the name "climatic bubo" to be truly fitting. Though he noted small abrasions on the penis in four out of his eleven cases, he makes no record of pursuing an inquiry into the sexual histories of the weeks preceding onset. At the same time Cantlie [4] reported on a series of similar cases and expressed the opinion that they should be regarded as abortive cases of plague and proposed to designate them "pestis minor".

This postulate is rejected in a second article by Godding [5] published in 1897. In this article he also states that he had received private communications from Army medical officers who had observed similar cases in India, and who believed them to be of venereal origin. He re-affirms his belief that they are produced by climatic influences.

The disease first received mention in a textbook when the 1910 edition of Manson's "Tropical Medicine" included it under the description of climatic bubo, and gave as its probable causation some virus gaining entry through an unobserved lesion on the leg or genitals.

The slow evolutionary process whereby opinion amongst informed writers on the subject began to crystallize into a conviction as to its venereal origin is traced by Stannus in the appropriate chapter of his book. One of the most interesting of his many references is to the report of C. B. Rost who served as surgeon of the German cruiser *Freiburg* in the West Indies during 1911-12. The latter deduced "from the fact that it only occurred among seamen free to go ashore and have intercourse with coloured women, and never among midshipmen who went in parties under supervision that the disease was probably venereal and though the initial lesion was not known to him, he believed that the virus was present in the vagina of those women" [6].

In this country, the situation as it had reached then is well reviewed by H. M. Hanschell [7] in 1926. He heads his article 'Observations on Climatic Bubo' and continues to use that term throughout giving the following somewhat naive justification. "The disease is climatic in the sense of being far more common in warm climates and the designation climatic makes so socially convenient a cover for venereal bubo that it is likely to be retained and even extended. It is to be hoped that this

consideration will be treated as it deserves and that a name which has long been a cause of obscurity and confusion allowed to lapse His cases were all seamen infected abroad, and, briefly stated, he considers that a diagnosis depends on —

(1) Inguinal adenitis and periadenitis

(2) Absence of known more or less common lesions about the genitals, e.g. chancre, chancroid, purulent balanitis, gonorrhœa &c though in two cases he observed pin head shallow ulcers in the coronal sulcus

(3) A history indicating that the condition has developed after coitus in the tropics or subtropics

To these he adds an additional point when he states that he has never seen a case in the circumcised and he would appear to consider the presence of a redundant prepuce as a contributory factor

During the last three or four years lymphogranuloma inguinale has attracted considerable attention from workers in U S A and much valuable research work has been done. The disease is endemic among the coloured people of the southern states The most comprehensive report so far published in that country is by De Wolf and Van Cleve in 1932 [8] after they had had considerable experience of the disease over a period of more than two years and had collected thirty one cases in the acute form Their description of it tallies with that generally accepted and they agree as to its venereal etiology

The French literature of recent years also contains many references to lymphogranuloma inguinale and it is believed that the disease is becoming increasingly common in that country The theory has been advanced that its introduction there was effected very largely by the French colonial troops during the Great War In the French literature the disease is continuously referred to as "la maladie de Nicholas et Favre, presumably on account of their having taken a leading part in its recognition as a separate clinical entity

Stanous has shown also that lymphogranuloma inguinale is a disease not peculiar to the male sex [9] Its manifestations in the female are dissimilar to those in the male, on account of the different arrangement of the lymphatic drainage of the genitalia The infection in the female, instead of appearing in the inguinal region is transported to the external iliac group of glands and should it give rise to suppuration there, involvement of the rectal wall is a common complication Therein lies the etiological explanation of the disease long known as 'inflammatory stricture of the rectum' The disease is also known to take other forms in the female but they are without the scope of the present dissertation which must be confined, of necessity to discussion of the disease as it appears in the male only

It is difficult to assess whether the incidence of lymphogranuloma inguinale is on the increase or not and I can find no attempt by any writer to do so That its recognition is increasing goes without doubt,

and this may tend to give an impression of increased prevalence From the log of the Senior Surgeon at the Royal Naval Hospital Bermuda, in the year 1878 [10], the incidence of buboes of all causations in that year can be worked out as approximately 22 *per mille* and this figure corresponde remarkably closely to those given in the Health of the Navy in respect of the same group s incidence on the West Indies station in recent years (in 1933 it was 23 *per mille* [11]) As the incidence of syphilis and chancroid which are the other two main causative factors represented in the group, can have varied but little it is probable that there were approximately as many cases of lymphogranuloma inguinale in the 1878 record

In this country it is likely that the disease will continue to be regarded as essentially one of sailors who will go on acquiring the infection in the native brothels in tropical and sub tropical seaports In this connection I have made inquiry at the Venereal Diseases Department of the Public Health Authorities in Dundee and I have been informed that they have had experience of only one case which conformed clinically to the criteria of the disease—and that was quite recently in the year just passed The subject was a seaman a native of Arbroath and he had acquired his infection in Java

It will be interesting to observe whether increased facility and speed of transport all over the world may not result eventually in a more frequent appearance of the disease at our venereal diseases clinics at home Its present relative rarity is to be attributed to the fact that so far it has presented in the male sex only and these victims are frequently rendered incapable of transmitting it by reason of the physical disability which it produces until cured It is reasonable to suppose that the introduction into the country of one or two female carriers of the disease, especially should they belong to the prostitute class, might result in its subsequently becoming endemic in just the same way as are the other better known venereal diseases

In this connection, the first authentic case wherein the infection had been acquired in this country has already been reported Stannus and Marshall Findlay [12] have described a case in an Italian waiter in London, who had not been out of the country for fifteen years and whose only history of coitus was with an English girl in Soho on or about August 7 1932

### The Diagnosis of Lymphogranuloma Inguinale

In an appendix to this thesis there is given in tabular form a brief outline of the main features of fifty two cases of buboes which had occurred among the personnel of H.M ships on the West Indies station during the years 1933 35 inclusive Included in it were all available cases of inguinal adenitis, other than those secondary to obvious septic conditions of the lower limb They showed histories varying from a few in the acute stages of the disease to many whose recovery had taken place up to eighteen

months before. The primary aim was to [illegible] the reaction of Frei but the other data collected coincident with this test will be referred to from now on in connection with the discussion of the diagnosis and treatment of lymphogranuloma inguinale.

Before going on to discuss the Frei test there are one or two other points of interest which require mention.

(*a*) *History of Coitus.*—A history of coitus within three to four weeks of the bubo's appearance can be obtained in the big majority of cases, with the not unnatural result that a denial of it may well be met with incredulity. The sailor (or any layman) commonly believes that the fact that there is present neither sore nor discharge precludes venereal disease, and a small number further that, that being so, a negative reply to any inquiry as to recent exposure is justified in any circumstance. From the present series it will be seen that out of the twenty-seven cases of proved lymphogranuloma inguinale a history of coitus in the weeks preceding onset was obtained in twenty-one, i.e. in 77 per cent. Whether the absence of it in the remaining six cases can be explained away satisfactorily by an acceptance of the view expressed above must remain a point open to debate, but one which most recent evidences from the literature seem to support. I have also to point out that all of these six patients were from ships other than my own and that perhaps an element of resentment at such inquiry being made so long after they had been discharged as cured might influence their answers.

(*b*) *Occupational Factor.*—Several writers, of whom Hanschell [13] may be mentioned specially, have drawn attention to the fact that the incidence of lymphogranuloma inguinale is higher among those whose occupations necessitate working in very hot and very moist atmospheres. He found the proportion among forecastle hands, stewards and firemen to be 1 : 1 : 2·5. In the present series of twenty-seven cases, sixteen were found to belong to the stoker and cook branches and eleven to the seamen and communications.

In an attempt to find whether this alleged contributory factor could be explained physiologically, I conducted an investigation into the average temperatures, taken in the groin, of two groups of stokers and seamen respectively, over a period of weeks. The results obtained showed no material difference whatever between the two.

(*c*) *Occurrence of a Primary Lesion on the Genitals.*—The general belief is that a primary lesion occurs in all cases of lymphogranuloma inguinale, and the fact that it is so seldom seen by the physician can be accounted for by its transitory nature and consequent disappearance by the time the bubo has appeared. The patients themselves are honest in their statements that there never has been one, as its size and general characteristics are frequently insignificant and escape their observation. When present it is most commonly found as a small vesicle or shallow ulcer on the glans penis, in size little more than a pin-head, and surrounded by a proper-

[illegible] the implication of the [illegible]

Personally I have seen a primary lesion described above, in only one case, and in that instance it appeared ten days after the bubo had first presented, and I regarded it as a recrudescence rather than a first appearance On general grounds I am prepared to accept the hypothesis that they occur, and pass unobserved by both patient and medical officer

In two other cases of my personal experience the onset of the bubo was associated with or preceded by a urethral discharge which I regarded as indicative of an intra urethral portal of entry Stannus mentions this as being a form of the primary lesion occasionally met with [14]

*(d) The Severity of the Associated Constitutional Symptoms* —It is but a beginning to say that the subject of lymphogranuloma inguinale is much more incapacitated than other patients whose buboes are of syphilitic or chancroidal origin There are many reasons which can be advanced as evidence in support of the belief that it is a true acuto systemic disease Constitutional symptoms are rarely if ever absent even in Service patients who present early for treatment

An irregular low pyrexia is the rule and with it is associated a progressive and insidious weakness, while the loss of body weight is frequently dramatic The appetite is lost and the patient s mental condition one of depression

Manson Bahr [15] has pointed out how in some extreme cases the patients may eventually reach a typhoidal state of such a degree as to throw doubts on the accuracy of the diagnosis especially when the toxæmia from prolonged suppuration is severe

It has been contended by some that the disease may spread by the lymphatics to infect other glands in remote parts of the body, but this is not generally accepted The coincidental existence of splenic enlargement has been observed in some cases of lymphogranuloma inguinale but the claim that it is attributable to the disease has not been substantiated as yet Personally I have never observed it

*(e) The Intra Cuti Reaction of Frei* —The investigation of lymphogranuloma inguinale was greatly advanced when Frei published his elaboration of a specific skin test [16] thus bringing forward scientific evidence in support of its recognition as a separate entity His antigen is prepared from the pus of an accepted case, his description being as follows —

The person from whom the antigen is to be made should be proved free from tuberculosis and free from venereal diseases past and present, by clinical examination and negative tests for syphilis gonorrhœa and ulcus molle The gland from which pus is to be withdrawn must be one that has undergone softening but not fistulation Aspiration by means of a Record syringe and thick needle under aseptic precautions, of, as far as possible, blood free pus, is then carried out The fluid is mixed with

[illegible] one in the proportion of one part of [illegible] sterile tube, and immediately put up in [illegible] Jena hard-glass ampoules So prepared, it is heated for two hours at 60° C in a water bath, and the following day at 80° C for one hour

The test is carried out by injecting 0 1 c c of the antigen intracutaneously on one forearm, and 0 1 c c of sterile normal saline into the skin of the other as a control The white puckered wheals so produced disappear in a few minutes The results should be read in forty eight hours and not before, and a positive result is denoted by the production of a red dome-shaped papule of about ½ cm in diameter at the site of the injection of antigen, while no change ought to have taken place in the control forearm

The results now to be reported on were obtained in the series of fifty two cases of buboes of various causation given in the appendix Opportunity was taken when in company with other ships of the station (America and West Indies Squadron, based on Bermuda), to submit to the test all ratings who at any time during the commission had suffered from an inguinal adenitis other than those secondary to septic conditions of the leg The method of carrying out the investigation involved intermittent testing of small batches of ratings, but any discrepancy on that score was safeguarded against by employing normal controls each time, and these volunteers were never at any time less in number than 25 per cent of the ratings being tested

The antigen used was prepared as described above in the bacteriological laboratory of the Bahamas General Hospital Nassau A commercial product, made from the brains of mice infected with the virus of lymphogranuloma inguinale, has been placed on the market in U S A and is claimed to be as specific and potent as the best human antigen, but I have no experience of it

Of fifty two ratings with a history, past or present of inguinal adenopathy who were submitted to the test, twenty-seven showed a positive reaction and twenty-five a negative The situation is probably most clearly represented by considering the cases under the three varieties of causation

(*a*) Eight known cases of syphilis gave seven negative and one positive. The latter result, which at first sight seems a discrepancy, is attributable to a double infection with chancroid bubo and syphilis the former being diagnosed as such at the time on account of the inguinal bubo having appeared some two weeks previous to the penile hard chancre from which the spirochæte was isolated

(*b*) There were nineteen cases in which a frank chancroidal sore had preceded the appearance of the bubo Eighteen of these were negative to Frei's test and one gave a positive result Closer inquiry into this case showed that the sore had been small in size and had healed in eight days If the specificity of the test is accepted, two explanations are then possible either the case was actually one of lymphogranuloma inguinale in which

the primary penile sore had been so prominent that recovery in alternatively, there had existed a double infection with chancroid and lymphogranuloma inguinale

(c) Twenty five cases all classified as uncomplicated lymphogranuloma inguinale, all showed a positive reaction to Frei's test

The normal controls at all times showed negative results

Of the twenty seven positive reactions three only were obtained while the subjects were yet in the active stages of the disease all the others being recovered cases In ten of the cases an interval of more than twelve months had elapsed between recovery and the application of the test and the greatest was one of eighteen months As none of the lymphogranuloma inguinale group failed to react this is by no means to be regarded as setting a limit to the persistence of reactivity which in many cases is probably for life

At first an attempt was made to classify the degree of reaction produced and so detect any waning with the increase of the interval between recovery and application of the test but this was found to be unduly artificial Nevertheless it is possible to note that the reaction in the acute stages of the disease and in those recently recovered was more pronounced and frequently developed a small yellow necrotic centre In all cases the dome shaped button of infiltration was a constant feature while those of stronger reactivity showed a surrounding areola of fainter erythema

The nature of the treatment which had been employed was found to have no effect on subsequent reactivity to Frei's test

That the value of Frei's test has now emerged from the controversial is almost certain, and the review which Stannus has given of it in his book is of importance As regards the work of observers in this country little has been published up to date, but Stannus states in his book that the value of the test has been confirmed both at the Hospital for Tropical Diseases, London and at the Royal Albert Dock Hospital

Several French workers have published results confirming the specificity of the Frei test Nicolas Favre and Lebeuf [17] used the antigen as prepared by Frei in eighteen cases of lymphogranuloma inguinale and all gave positive results They also evolved another antigen which they term 'Lantigene glycerine, using a technique similar to that of Pasteur for the preparation of anti rabies vaccine It is a glycerine extract of macerated gland tissue obtained from a bubo infected with lymphogranuloma inguinale With this particular antigen they obtained fourteen positive results in a series of fifteen cases They affirm their belief in the great diagnostic value of the test but do not consider it infallible They also point out that the allergy does not manifest itself for a variable time after infection They report one case in which the test had been repeated three times and it gave a persistently negative result False positives were obtained in two cases—one, a case of syphilitic bubo and the other

[illegible] These aberrant results, however, were obtained [illegible] employed had been prepared from macerated gland [illegible]

[illegible] [18] conducted an investigation of the results given by the Frei test in a series of mixed buboes Both as regards the cumulative [illegible] represented in it, and its numerical composition, their series is very [illegible] to my own Out of forty-one cases of lymphogranuloma inguinale, [illegible] eighty eight positive reactions were obtained on initial testing (at dates [illegible] from twelve days to three months following the onset of bubo [illegible] manifestations) In two out of the three cases which at first failed to [illegible] positive reaction repeated testing eventually showed a result on the thirty fifth day in one, and on the forty fifth day in the other The third patient was lost trace of, unfortunately The cases of bubonic syphilis and chancroidal bubo showed consistently negative results

The same observers also record the following interesting fact One of their patients showed an unusually vigorous skin reaction with the ultimate formation of a small superficial abscess They were able to obtain 1 c c of pus from it and using it prepared an antigen which gave positive results in other subjects of lymphogranuloma inguinale

Hellerstrom [19] is another continental worker to furnish evidence of the specificity of the Frei test, and he has observed that in one or two cases tested in the active stage of the disease, the production of a positive skin reaction in the arm may be associated with a focal reaction in the bubo itself He concludes by stating that in his hands the test has always proved to be a specific one

Lépinay and Grévin [20] applied the Frei test to a series of seventy nine prostitutes undergoing routine surveillance in Casablanca, and found only one gave a positive reaction She was under treatment for an ulcer of the vulva associated with inguinal adenopathy In the other seventy eight who all showed negative results, there was no indication in either their existing conditions or previous medical histories to suspect infection with lymphogranuloma inguinale

At a discussion on the value of the Frei test held at the *Société Française de Dermatologie et Syphiligraphie* Simon [21] deprecated the way in which all manner of odd cases of genito anal disease were coming to be accepted as manifestations of lymphogranuloma inguinale simply on the strength of the fact that they gave a positive reaction to a Frei antigen He stated that he had found positive reactions in 10 per cent of a series of cases taken at random, none of whom showed any sign of the disease Such a result led him to doubt the specificity of the reaction

In reply to this Nicolas [22] reaffirmed his belief in the absolute specificity of the test *when the antigen was prepared from pus* Apparently it had become the practice among one or two workers to use macerated gland tissue in the preparation of their antigen, and Nicolas points to the possibility of the presence of tissue substance itself being responsible for an allergic response

[illegible] the [illegible] important [illegible] the parasitemia [illegible] reaction The erythematous nodule normally lasts for a long time [illegible] fifteen days and more) and disappears very slowly Desquamative [illegible] guinal tion, the latter lasting for weeks commonly ensue

A large scale investigation of the value of the Frei test was reported on by De Wolf and Van Cleve in 1931 [21] They employed the test in a series of 1 010 patients, which number included suspected cases of lymphogranuloma inguinale, cases of syphilis, chancroid and gonorrhœa and a great many controls in apparent good health chosen at random from the clinics and hospitals of the public health services of Cleveland U S A The antigen used was prepared after the directions of Frei from eleven different patients and I propose to summarize their results very briefly in the same manner as my own have been presented above

(*a*) Eight-four cases of early active syphilis were tested and all found negative The authors state that so far they have not come across a single infection with syphilis and lymphogranuloma inguinale

(*b*) Seventy-five cases of chancroid forty one of whom presented buboes were tested, and all but two gave negative findings The two positive reactions were regarded as cases of mixed infection with chancroid and lymphogranuloma inguinale

(*c*) Fifty eight patients were found to react positively to the Frei test, and they either showed definite clinical evidence of the disease or gave a history of chronic inguinal adenitis at some time in their lives

Thirty-one of the patients giving positive reactions were in the acute stage of the disease and in this connection the authors time the onset of positive reactivity to approximately the stage where the skin becomes involved in the gland mass

In twenty four instances of a positive reaction, the patients belonged to the large number of people with medical histories presumed at first to be free from suspicion of the disease In all of the twenty four the authors, on more exhaustive inquiry were able to elicit the previous existance of some form of inguinal adenitis frequently many years before This at the best, can only be considered presumptive evidence of the persistence of reactivity, but it is very suggestive Definite proof can only come once the Frei test has been in common use for a longer period than it has up to now

The remaining three positive reactions were obtained in cases of the genito-ano rectal syndrome (i e in females)

Kinneard [25] has published his results obtained in a series of cases carried out at Nassau (Bahamas) He obtained positive results in approximately only 70 per cent of cases where the clinical evidence was presumptive of lymphogranuloma inguinale He has assured me verbally, however, since then, that he is satisfied that his failure to obtain 100 per cent results was only because some of his cases were submitted to the

test before reactivity had had time to develop He [illegible] its specificity

Ravaut, Levaditi and Meisler [26] report an adaptation whereby a positive result is indicated by a general febrile reaction following on intravenous injection of a skin test antigen The antigen used was one which had been prepared from a monkey brain infected with the virus of lymphogranuloma inguinale Nine patients all subjects of proved lymphogranuloma inguinale (they had given positive results on skin testing) were given doses of from 0 25 to 1 c c. of the monkey brain emulsion intravenously In each case a febrile reaction was provoked The rise of temperature reached its maximum in twelve to eighteen hours, was usually of 2° to 3° C , and was associated with headache and general malaise The rise is more gradual than sudden and the reaction is usually over in twenty-four hours They also found that subsequent repeating of the intravenous injection led to a diminishing degree of response

That the general reaction is a specific response is shown by the fact that the same antigen used in the same way on seven cases of chancroidal bubo and fourteen cases of syphilis and other mixed infections failed to produce it

Ravaut [27] later reported that in two cases where the clinical signs present pointed to a diagnosis of lymphogranuloma inguinale and where the intra-cuti reaction remained persistently negative, he was able to induce a specific general reaction by the technique described above—intravenous injection From this he concludes that the method of intravenous injection may be the more delicate test of the two

## The Pathology and Bacteriology of Lymphogranuloma Inguinale

As I am not in a position to advance personal observations on this aspect of the disease, I propose to make but a brief résumé of the position as it has been advanced up to date.

Of the macroscopic appearances Cole [28] states that, when a mass of lymphogranuloma inguinale lymph nodes is removed surgically, there is a dense perinodal exudation binding the nodes together These nodes on section, show multiple whitish areas of softening abscesses If in an early stage they may simply show reddening

The histological picture has been carefully described by several writers including De Wolf and Van Cleve [29] It resembles somewhat the appearance of tuberculosis—certainly of a granuloma There is found specific granulation tissue with areas of necrosis walled off by palisades of epithelioid cells These areas of necrosis often assume a star like shape and often there is an extensive impouring of leucocytes It probably is not always possible to differentiate the picture from a tuberculous or from a syphilitic or other infectious lymph node state.

The abscesses in the [illegible] show [illegible] down material and giant cells [illegible] different parts of the nodes

Hanschell [30] records [illegible] specific organism in the juice aspirated from unruptured [illegible] lymph glands which have undergone softening during the course of [illegible] with lymphogranuloma inguinale On this point there is almost complete unanimity among all observers of recent years

The most important work which has been done in this country in the search for a causal organism is by Marshall Findlay [41] of the Wellcome Bureau of Scientific Research and published in 1932 While he attributes the original discovery that the disease is due to a filtrable virus with neurotropic properties to Hellerstrom and Wassen his own work is an invaluable contribution. He has shown that the injection of bacteriologically sterile material from human buboes intra cerebrally into monkeys and mice produces a meningo encephalo myelitis Also that when it is inoculated into the groin of a guinea-pig it may give rise to a bubo

He has shown that it is possible to transfer the infection through several passages in either monkeys or mice and as regards the latter he achieved ten mouse passages with one strain of the virus The technique used in the transfer is the intra cerebral injection of bacteriologically sterile emulsion of material from the brain of the infected animal when killed

The filtrability of the virus was determined when it was shown that a monkey inoculated intra-cerebrally with a filtrate of infected monkey brain developed nervous symptoms on the fifth day and was killed on the tenth when moribund The histological changes present in the brain were those characteristic of the foregoing cases, while material prepared from the brain was infective for mice

Findlay was also able to demonstrate that serum from human cases had protective properties against the virus The intra cerebral inoculation of mice with equal parts of emulsion of infected mice brain and convalescent serum failed to passage the infection The same protective effect was not shown by normal human serum, or by serum from a case of syphilis

The same observer (Findlay) published in 1935 [42] a further and more extensive investigation, the results of which confirm and elaborate those detailed above He was able to employ material from fifteen different cases, infected in various parts of the world He was able to show that certain strains of the virus were slower than others in producing encephalo myelitis in mice There was also a tendency for many strains of the virus to die out after a varying number of passages in experimental animals

From histological examination of the lesions produced by the virus in experimental animals it was seen that the essential change is a proliferation of the cells lining the lymph channels He also states that in the primary lesion in the skin in man the changes originate in the small lymphatic channels of the cutis vera. This is of particular interest as in a latter part of this thesis there is described a case wherein clinically it was

readily evident that a spread of infection was taking place along the dorsal lymphatics of the penis to the inguinal group of lymph glands

The basis of the Frei test is illumined by an observation recorded by Cole [33] He states that he has taken the antigen and run it through a Berkefeldt filter and found that the filtrate will not give the reaction when injected into subjects normally responding to the usual antigen He concludes that there must be something in the broken-down tissue of the lymph node which causes the reaction

### The Treatment of Lymphogranuloma Inguinale

There are several factors which tend to confuse the issue when it comes to either deciding the best line of treatment to be employed in a particular case, or to assessing the relative values of several varied treatments employed in a series of cases—as is to be attempted here Of these factors two very important, if almost self evident ones must be emphasized

As has already been pointed out in the introductory description of lymphogranuloma inguinale spontaneous resolution and cure occurs in a very small proportion of cases This point tends to induce a certain hesitancy in advancing statistical data showing the relative rapidity of cure is indicated by the number of days sickness I see no reason, however, why this consideration necessarily should invalidate all attempts to do so and I propose to bring forward some such figures in the belief that they are still of value when read bearing it in mind

The second factor of importance is that the separation of non syphilitic buboes into those of chancroidal origin and those of lymphogranuloma inguinale is a thing of comparatively recent achievement and many references in the literature ignore it No accepted standardized specific treatment for buboes of non syphilitic origin can be said to have been developed, and the number of varied treatments recommended suggests that none are completely satisfactory

As a first step I propose to discuss the advisability or otherwise of employing surgical measures Removal of large masses of glands with surrounding cellular tissue is a method of treatment which rightly has fallen into disuse If extensive operative interference is carried out there is some danger of elephantiasis of the scrotum or leg ensuing In addition the view has been advanced by some writers that these diseases are in the nature of a general systemic infection in which the inguinal bubo is but a local manifestation in which case any attempts at their arrest by adopting radical measures locally would not be justified Nevertheless such a line of treatment is still followed and advocated by many Continental workers to day

There remains, however, for consideration, the adoption of less drastic surgical procedures in the treatment of the local bubo One common treatment in the past has been incision and packing with gauze medicated or plain Its weakness lies in the almost inevitable secondary infection

which must ensue since the groin duct is probably [illegible] potentially septic in the body and the communication [illegible] which is slow to heal and causes an unduly lengthy [illegible] list As the measure of the success or otherwise [illegible] the rapidity with which the patient can be returned to duty, the following table is the most instructive feature which could be deduced from the present series In it the effect of incision alone is considered and any associated treatment is temporarily ignored Those cases in which spontaneous rupture of a softened bubo was allowed to take place the contents expressed and the site of leakage immediately sealed with a collodion dressing are included in the non incision group together with those in which aspiration was employed, and those in which recovery took place without softening

| | Number of cases | Number treated by incision | Average days in sick list | Number treated without incision | Average days in sick list |
|---|---|---|---|---|---|
| Chancroidal bubo | 19 | 9 | 45 | 10 | 28 |
| Lymphogranuloma inguinale | 37 | 5 | 71 | 32 | 33 |

These figures, at first sight, seem to afford strong evidence in favour of a conservative attitude towards local treatment of the bubo but it is essential to bear in mind that incision would be resorted to more frequently in those cases either of long standing or of greater severity Nevertheless they do support the contention advanced on general principles, that it is better to avoid risk of secondary infection by anything in the nature of local surgical interference

If this is to be avoided the natural corollary is to initiate an effective treatment at an early stage and so prevent the bubo from going on to softening The treatment of choice should be one which arrests the progress of the infection while the bubo is still in a hard condition, leaving it a comparatively innocuous fibrotic mass which will gradually over a period of weeks or months, diminish and disappear meanwhile permitting the patient to carry on with his duty

As lymphogranuloma inguinale is not a common disease the number of cases submitted to any one form of treatment by any one observer has often been small and the resultant difficulty in assessing their relative values is easily understood My first opportunity of interesting myself in the subject came when in Bermuda during the latter months of 1933 At the Royal Naval Hospital, Bermuda Surgeon Commander P L Gibson and Surgeon Lieutenant Commander L R Sorley were employing the intravenous exhibition of tartar emetic as a routine measure in all cases of non syphilitic bubo admitted there and I was privileged to observe many of their results These were later published [34] and were criticized by

[illegible] was [illegible] the [illegible] [illegible] [illegible] [illegible] to be composed of cases of lymphogranuloma inguinale inasmuch as they had not been submitted to the Frei test (As a matter of passing interest it may be mentioned that several of these cases were later tested [illegible] when they were recovered some time and again serving afloat and found to give positive reactions)

The technique of the tartar emetic treatment as employed by Gibson [illegible] consisted of giving an initial dose of 0 1 gr dissolved in 10 c c [illegible] distilled water, the second and subsequent doses were administered at weekly intervals with two increases of 0 5 gr each time, 1 5 gr [illegible] the maximum dose employed Stress was laid on the necessity of [illegible] injection into the vein and five minutes was held to be minimum [illegible] if symptoms of discomfort or even slight distress were to be avoided [illegible] Latterly they tried giving the injection in such a time as to produce a [illegible] of mild discomfort and claim that they found a smaller total [illegible] of the drug was required to effect cure I reasoned however that if the drug was the remedy the more of it that was given in the shortest possible time the better always bearing in mind that it is a poison and 2 gr of it have been known to produce death in an adult of undue susceptibility [36] Within limits, there was scope for the exercise of judgment with regard to frequency of injection and amount injected at one time and it would be interesting to see how greater doses were tolerated and what effect they produced The injection of poisonous [illegible] directly into the general circulation calls for a proper sense of responsibility, but if the tolerance of the patient is first estimated by commencing with small doses a progressive increment to those of moderate strength might be justified as long as caution was used

At this point some consideration may be given as to how antimony has come to attain its present position as the accepted remedy in more than one disease especially in the field of tropical medicine

About the middle of the eighteenth century two famous antimony preparations were in common use—James Powder and Plummer's Pill The former still exists in the British Pharmacopœia as pulvis antimonialis and the latter is mentioned in Martindale's Extra Pharmacopœia In their day both were popular remedies for small-pox, ague, dropsy and syphilis

During the nineteenth century antimony in the form of pulvis antimonialis was a common component of expectorant mixtures, and, as the tartrate it was used as an emetic and diaphoretic

The vinum antimoniale is possibly the best-known preparation for oral use to day, and of course has an emetic action This fact precludes any attempt to effect anything like a concentration of antimony in the blood stream by giving it *per os* This difficulty must have delayed for many years its now general acceptance as one of the most useful drugs in tropical medicine

In this connection Dr G C Low has said [37] 'I do not think sufficient attention has been drawn to the enormous strides made in the treatment of tropical diseases by the discovery of the possibility of giving antimony intravenously It is extraordinary that a drug which causes severe vomiting when taken by the mouth and extensive sloughing when introduced into the tissues, should cause no toxic or troublesome symptoms when put directly into the veins Again it is extraordinary that a drug should act as a specific in diseases differing so much in their etiology as trypanosomiasis, leishmaniasis ulcerating granuloma and bilharziasis All these diseases are now brought under control, and the last three can definitely be cured in many instances

According to Christopherson [38], antimony as a therapeutic agent was almost extinct when, in 1905, Plimmer and Thomsen at the Lister Institute commenced a series of experiments on animals infected with trypanosomiasis They administered the drug subcutaneously, and though they obtained results the administration was followed by sloughing and abscess formation Nevertheless, Sir Patrick Manson tried subcutaneous injections of antimony in two cases of human trypanosomiasis under his care at that time, but the sloughing of tissues was so severe that the method had to be abandoned Administration by the mouth was then tried, but the vomiting produced rendered this impracticable also An impasse was then reached until it was discovered that the drug did not cause sloughing of the veins when injected into them

The evolution of the modern technique, whereby antimony preparations are injected straight into the blood-stream is recorded by Low in his paper "The History of the Use of Intravenous Injections of Antimonium Tartratum" [39] In it he attributes the initial discovery to two Belgian workers, Broden and Redhain who first used it in cases of human trypanosomiasis in the Congo Gaspar Vianna (in Brazil) followed this up by trying it in cutaneous leishmaniasis previously treated by arsenicals (606) unsuccessfully and reported good results

In 1917, Christopherson, in Khartoum, investigated the action of potassium antimony tartrate given intravenously in cases of bilharzia disease and published his results in 1918 [40] The solution which he employed was ½ gr to 60 m and the maximum dose given was 2 gr In this publication he also discusses the symptoms of overdosage He considers that a metallic taste in the mouth and throat and cough need scarcely be considered as poisoning, but that vomiting, giddiness, delirium and cramp in the calves should all be taken seriously They are danger signals and indicate decreased dosage and increased intervals Collapse symptoms are at all times serious The symptoms of chronic antimony poisoning due to the cumulative effect of its administration over long periods he details as Weakness loss of weight, anaemia, glossitis, cracked tongue with ulcers, and diarrhoea In such cases tartar emetic must be stopped and the symptoms treated

[illegible] shows that the [illegible] described in [illegible] upon intravenous [illegible] have been [illegible] solution used to dissolve [illegible] that since it has [illegible] stomach to dissolve the drug in [illegible] of distilled water (5 to 10 c c ) the toxic reactions had been mitigated He also suggests that dissolving the drug in 5 per cent glucose solution has helped to avert joint pains and muscle hyperæsthesia

There is one fatal case in the literature Harkness [42] reports a case where death from acute antimony poisoning followed intravenous administration of a gross over dose due to a dispenser's error The solution presented by the dispenser for use was perfectly clear but unfortunately contained 2a gr of sodium antimony tartrate to 10 c c (Presumably it was intended to contain 2 5 gr , though this is not precisely stated ) When 6 c c had been injected (1 e , 15 gr ) the needle was withdrawn as the patient coughed considerably and became cyanosed He suffered from nausea and vomiting, and complained of pain of a diffuse burning nature in the substernal and epigastric regions Two minutes after the injection 180 c c of urine were passed which contained nearly a gram of sodium antimony tartrate Diarrhœa of a severe type ensued Persistent hæmatemesis appeared twelve hours later, and also hæmaturia Cyanosis and pain continued throughout, and the patient died thirty-seven and a half hours after the injection

Tartar emetic in either of its two forms—the potassium or sodium salts —is the preparation of antimony which is employed most commonly for intravenous exhibition to day It contains 36 6 per cent of antimony in the trivalent form Cawston [43] has published a review in which he assesses the relative values of the different antimony preparations in the destruction of schistosomes He states that tartar emetic has proved superior to pentavalent antimony, represented by such drugs as neostam antimosan and fouadin but whether his conclusions are applicable to a non-protozoal disease such as lymphogranuloma inguinale is another matter In kala-azar the pentavalent compounds are preferred

Manson's "Tropical Diseases (1935 edition) [44] lays down some general principles for the technique of tartar emetic administration

Tartar emetic is usually made up in a 1 or 2 per cent solution the initial dose being ½ gr of the salt, working up to a maximum of 2½ gr for an individual dose The solution should be made up with freshly distilled sterilised water Again —"On no account should antimony tartrate be kept stored in solution for it has been ascertained that low forms of fungi develop in it rapidly, with the formation of products of a high degree of toxicity

The amounts of antimony given *in toto* are of some interest 25 to 30 gr is the total amount required to kill all the trematodes in bilharzia according to Manson's Tropical Diseases, while Christopherson when he first published the results he had obtained in this disease found it

[illegible] one of [illegible] [illegible] and Low in 1911 [illegible] give a total of 33 gr to effect a cure, but this was spread over a period of three and a half months Incidentally, in describing this case they suggest that it be regarded as belonging to the lymphogranuloma inguinale group—a term more loosely employed then than it is now From their description there appears to have been no involvement of the inguinal lymphatic glands but just a deep eroding ulcer of the penis and I am disinclined to regard it as an instance of the tartar emetic treatment of lymphogranuloma inguinale

The maximum individual dose of tartar emetic of which I can find record is 2½ gr. and there appears to be some hesitancy on the part of some to push it beyond 1½ to 2 gr for fear of toxic symptoms ensuing.

To return, however to the consideration of the employment of antimony in the treatment of lymphogranuloma inguinale I was satisfied from what I had seen of the work of Gibson and Sorley that tartar emetic appeared to have a perceptible influence on the progress of the disease and as my ship was about to undertake a lengthy cruise which included many calls at West Indies and South American ports where lymphogranuloma inguinale was known to be endemic, I determined to employ it in any cases which might come my way At the same time I felt that some amendment of technique with an increased dosage and more frequent exhibition would be worthy of trial

As it turned out I was called upon to treat six cases of lymphogranuloma inguinale and one of chancroidal bubo I propose now to give a short summary of the case notes of these, with progress and treatment in some detail, to be followed by a general discussion

Case I —E S., stoker aged 29 On February 10, 1934 this rating reported complaining of a small lump in the left groin which he had observed for the first time that morning Examination revealed a swollen gland of the left inguinal group in size approximately that of a small walnut It was markedly tender on palpation but showed no redness to suggest an acute inflammatory origin Its margins were ill-defined There was no pyrexia or increase of pulse rate but the patient complained of "feeling out of sorts" There was no discoverable primary focus of any possible septic affection of the leg or foot, and no sore on the genitalia On questioning he gave a history of sexual intercourse with native women from January 5 onwards, i e at intervals during the five weeks preceding onset These had taken place in Nassau (Bahamas)

He was allowed to continue on light duty and kept under observation

On the sixth day (February 16) palpation of the gland gave a doughy semi fluctuant sensation as if it were tending to break down and his morning temperature was 98.8° F The size of the swollen gland had increased A provisional diagnosis of lymphogranuloma inguinale was made, and an initial dose of 0.5 gr tartar emetic given intravenously The Kahn test was reported negative.

On the day following the first injection it was evident to both observer and patient that tenderness on palpation was perceptibly less, though the latter still complained of a constant dull ache at the site of the swelling The exhibition of the drug was continued at three day intervals, the next three injections being of

[illegible] gr resp-quinch [illegible] consisted of 1 gr of tartar [illegible] the patient married [illegible] s nort il outine ch [illegible] hoot, despite [illegible] a low pyrexia T [illegible] a max mum loss of w eight of 12 lb [illegible] stage of the nlcer [illegible]

[illegible] s well n, itself gradually [illegible] a firmer consistence and by the [illegible] eath day from the onset was quite [illegible] not at all tender, and just slightly [illegible] ze than when it was n be th [illegible] present first reported This residual small [illegible] which presen nally comprised only inert fibrous tissue was slow to [illegible] on this stage on but caused no inconvenience to the patient Exami [illegible] months from the onset showed a palpable hard stringy mass across [illegible] gional region In the centre of which the nodular remains of the bubo [illegible] ande out

[illegible] ment gave a positive reaction to the Frei test in June, 1935—seventeen [illegible] r infection

[illegible] — J [illegible] able seaman, aged 24 This rating reported on March 5 1934 [illegible] n the left inguinal region of two days duration At first it was s [illegible] thus that of a walnut and on palpation gave a sensation of a firm [illegible] th ost resilient and indiarubber like Tenderness was marked and [illegible] e complained of a dull aching pain over the swelling which caused him [illegible] th of limp His temperature was 99° F and he complained of anorexia [illegible] l malaise No penile sore was present, nor any sign of abrasion or [illegible] possible septic focus about the lower limb He had an exceptionally [illegible] limit prepuce He gave a history of sexual intercourse on a single occasion [illegible] Kingston Jamaica some three weeks prior to the onset The woman was a [illegible] caste

On the following day the third day of the swelling his evening temperature [illegible] 101° F and was associated with a proportionate increase in the severity of [illegible] symptoms of general toxaemia, which necessitated his being placed on the [illegible] list and treated as a cot case He remained in bed for a total of twenty [illegible] days but his recovery could not be considered complete until nine weeks had [illegible] d

The Nabo test was reported negative

The progress of the infection was much more rapid and acute than it had been in Case I and by the fourth day from onset the bubo was the size of a small orange very tender, and the overlying skin dull red and inflammatory in appearance There was a very marked laxity of the swelling to the underlying tissues, and there was a tendency to burrow On this day (the fourth) the first dose of tartar emetic 0 5 gr was given intravenously and was followed by subsequent doses at three day intervals Increment of dosage was at the rate of 0 5 gr each time until 3 gr was being given this dosage being used on the last five occasions of injection and tolerated fairly well

The response to treatment was disappointing at first and for ten days after its institution it appeared to be without effect in arresting the progress of the infection During this period the patient volunteered the information that he always observed an increase in the pain of the bubo coming on an hour or two following the injection, and lasting for approximately twenty-four hours The skin over the centre of the swelling became glazed in appearance and much thinned being firmly fixed to the underlying gland mass On the twelfth day there was a small localized area of superficial fluctuation, regarded as a sign of central softening

From this point on there may be claimed to be present a response to treatment which in some of its aspects suggests the specific The temperature had commenced around 101 F but it showed remissions after each of the fifth, sixth and seventh injections of tartar emetic solution, and by the twenty first day had settled There was also no absorption of the contents of the localized area of

softening and a general involution of the whole gl[illegible] was by a decrease in size a sharper definition of its margins [illegible] tissues, and a disappearance of all tenderness

The course of tartar emetic given comprised a total [illegible] and the only outward effect was a thrombosis of the superficial veins of the arm presumably due to its administration in too strongly concentrated solution—3 gr. in 10 c.c. of a 2 per cent. solution, for the later doses.

The total disappearance of the residual bubo was slow to achievement and traces of it were still palpable up to twelve weeks from the onset. Its resolution was aided by the pressure of an elastic bandage. The loss of weight in this case was very marked—17 lb.—and is indicative of the severity of the associated constitutional disturbance.

The patient gave a positive reaction to the Frei test in June 1935 i.e. thirteen months after infection.

*Case* 3.—M. W., stoker, aged 28. This rating reported on April 3rd 1934 complaining of a painful swelling in the left groin of two days' duration which on examination was found to consist of a firm indurated enlargement of two glands of the left inguinal group. They were contiguous and together formed a small dumb-bell shaped tumour, to size a little larger than a walnut. There was an absence of erythema and the tenderness on palpation was not marked. The presence of any primary septic focus was carefully excluded and no penile sore could be seen. There was a history of sexual intercourse thirteen days previously at Buenos Aires when it may be assumed fairly safely that the female partner would be of native or mixed extraction. The Kolm test was reported negative.

The temperature was 100° F., but constitutional symptoms were minimal and at the patient's own request he was allowed to continue normal routine on light duty. At this point it may be stated that despite a continuance of low pyrexia for nearly three weeks his recovery was achieved without recourse to rest treatment.

The course of tartar emetic treatment was commenced on the second day with an initial dose of 1 gr. and continued at intervals of approximately three or four days with increasing dosage as before. Up to the tenth day of the illness the tendency in the local bubo was to increase in size but from then on there was hardly a stationary period of some days followed by a gain of recession. The peri-adenitis present in this case was much less than in any of the others and it was possible concisely to satisfy oneself that more than one gland went to the formation of the bubo. Two separate coalescent lobes could be palpated superficially and at least one other towards the deeper aspect.

Remissions of temperature following upon injections of tartar emetic occurred in the period just prior to the arrest of the progressive infection, and in the period during which the disease was stationary. Exhibition of the drug was continued for twenty-five days more, as the swelling was slow of absorption, and a total of 24½ gr. was given.

Complaint of joint pains following the injections was made and on the day following an injection of 3 gr. on May 20 there was much pain and restriction of movements in both shoulder joints and in the right elbow joint. (The injection had been made into the veins of the left arm.) There was a history of rheumatism three years previous which may have rendered the synovial membranes more susceptible, but in any case these joint manifestations were regarded as toxic symptoms indicative of over dosage. Up to this point 19½ gr. of tartar emetic had been given and no interval of some days was allowed to elapse before treatment was resumed.

This patient gave a positive reaction to Frei's test in June 1935—fourteen months after infection.

[illegible] N, stoker, aged 26 The [illegible] occ to which there existed a [illegible] wall [illegible] filo and syphilis, and whether or [illegible] s to be attri[illegible] the one on the other the manifes[illegible] ous and progress [illegible] several unusual features

[illegible] st reported on April 26 1934, complaining of a painful swell[illegible] [illegible] of region of three days duration In size and appearance [illegible] those described in the preceding cases at onset The [illegible] 8° F and no penile lesion of any description could be [illegible] of sexual intercourse on a single occasion at Buenos Aires [illegible]

[illegible] that on which he was seen first there appeared a scanty [illegible] accompanied by any subjective symptoms of an acute [illegible] ical examination of a smear failed to reveal gonococci and [illegible] could be identified The case was diagnosed as one of [illegible] gu[illegible]nalo and treatment by tartar emetic instituted

I was [illegible] t regard the urethral discharge as indicative of a possible intra urethral focal recurrence of the infecting virus—a counterpart of the transitory small penile sore which is held by many writers to be present in every case but which, so far had never in my own personal observation This view was supported when on the sixteenth day there became palpable a deep seated cordele in the body of the penis about [illegible] above the meatus in the corpus cavernosum, and in such a position as would be quite in keeping with its deeper surface being in apposition to the wall of the urethra It was exquisitely tender, and from it there extended upwards a wall defined lymphangitic area of lymphangitis which merged into the general erythema of the acute bubo The superficial lymph vessels were injected and were visible to the naked eye as threads of a deeper red colour in the general erythema and no better demonstration of the lymph drainage of the penis could have been desired They ran straight into the acutely inflamed glued mass

The tartar emetic therapy was pushed to the full 3 gr doses every three days and the penile lymphangitis treated with ichthyol and glycerine Generalised oedema of the penis distal to the nodule in its body was very troublesome especially as the patient had a large redundant prepuce The nodule and associated lymphangitis disappeared in seven days and the problem temporarily resolved itself into one of treating the bubo The Wassermann reaction and Kahn test were reported negative twenty eight days from the onset This is of particular interest in the light of later developments

On the thirty fourth day, and after 18 gr of tartar emetic had been given, the acute infective stage of the bubo appeared to have been arrested, and as it was assumed that the slow absorption of the residual fibrotic mass would follow on the lines of the preceding cases, the patient was allowed to return to duty

Two days later the patient drew attention to a persistent ulcerated crack at the tip of his prepuce where the previous dense oedema had caused the skin to give way This in the course of two days, became a small hard, flat indurated sore and on the thirty fifth day of his illness and the forth sixth from the date of his exposure to infection, the *Spirochæta pallida* was found in a specimen taken from it The diagnosis of syphilis was confirmed by the Wassermann reaction and Kahn test being reported positive a week later A course of treatment by arsenicals was instituted

Ten days after the syphilitic sore had appeared there was a recrudescence of acute symptoms in the bubonic mass in the left inguinal region which had of late appeared inert The problem then was whether to regard it as (*a*) a syphilitic bubo, (*b*) a simple recurrence of the lymphogranuloma inguinale, or (*c*) a bubo due to a mixed infection with pyogenic organisms, for by this time the penile sore had broken down considerably and was discharging freely Most probably

all of the [illegible] (*a*) (*b*) and (*c*) [illegible] represented [illegible] The [illegible] treatment [illegible] had no effect upon it and the [illegible] was suspected [illegible] order that [illegible] might be substituted This was followed by a second [illegible] ment but [illegible] had reached the size of a large orange began to [illegible] signs of [illegible] and definite fluctuation was soon present A [illegible] was treated [illegible] doses obtained The cavity rapidly refilled [illegible] time it was [illegible] and spontaneously aided the opportunity taken of exploring all its [illegible] and then sealing the [illegible] opening with a [illegible] dressing By this time the tartar emetic seemed to have been effective in the acute [illegible] and it was tantamount to emptying a cold abscess After expression of the contents the gland mass felt like a miniature volcano with hard sides and saucer like crater at its apex After this second course of tartar emetic had amounted to 11 gr the residual mert bubo was felt to its own advantage resolution and a return made to the routine treatment for the syphilis [illegible] light pressure from the use of an elastic bandage was again found of value in the later stages of this case

It might be suggested that the real causative factor throughout this case was the spirochæte but against it is the fact that this patient gave a positive reaction to the Frei test while it was applied to him in June, 1935

The severity of the constitutional symptoms throughout the varied phases of the patient's incapacity was very marked and at one time he could be described as cachectic His maximum loss of weight was 19 lb which it took him almost a year to regain and normally he was a well developed athletic youth

The existence of a double infection in this case warrants some reference to another such which was reported to some detail by Stannus and Marshall Findlay in February, 1933, as being the first case of lymphogranuloma inguinale reported in this country where the infection had not been acquired overseas There was an associated syphilitic infection and to its presence they attribute the failure to react to Frei's test In this respect and also in that of treatment their experience differs from mine They found that the condition cleared up with intravenous arsenicals and bismuth intramuscularly, while I found it necessary to temporarily suspend anti-syphilitic treatment in order to effectively treat the bubo with tartar emetic

*Case 5* —S S able seaman aged 23 This rating reported on June 21 1931 with a urethral discharge, and gave a history of sexual intercourse six days previous at Santos (Brazil) Microscopical examination of a smear showed a heavy mixed infection, largely extracellular in its distribution, and morphologically not conforming to the gonococcus He was regarded as a case of simple urethritis and prescribed the routine treatment by irrigations The discharge was at no time profuse, and was whiter than the ordinary gonococcal one The Kahn test was reported negative

On the twenty fifth day he drew attention to the appearance of an inguinal adenitis on the left side which occasioned a dull aching pain in that region but was not tender on palpation In size it was approximately that of a walnut, firm and resilient in consistency and with well defined margins There was a coincident increase in the quantity of the urethral discharge There was no pyrexia and he remained on duty

A short course of tartar emetic treatment was given five injections in all, commencing with an initial dose of 1 gr , with 3 gr as the maximum employed The swelling at first continued to increase in size but was never of an angry appearance, and resolution was achieved fairly rapidly It is worthy of note that this was another case in which complaint was made by the patient of no increase in the ache over the swelling following soon after the injections and lasting several hours

The provisional diagnosis of lymphogranuloma inguinale in this case was

confirmed by [illegible] to the Frei test in June 1934 The fact that the [illegible] preceded by urethral discharge suggests that the primary lesion of the virus may have been an intra urethral one

*Case* 6—I S stoker aged 25 On April 8, 1934, this rating reported with a bubonic swelling in the left inguinal region of some twenty four hours duration In size and other appearances it conformed to the clinical picture of an early case of lymphogranuloma inguinale, and the diagnosis was made There was no penile sore, and he gave a history of sexual intercourse with a half caste at Kingston, Jamaica, twenty three days prior to the onset

Despite the fact that I was confident of the accuracy of the diagnosis I was unwilling to institute tartar emetic treatment right away—not because of any therapeutic consideration but for reason of a purely ulterior motive About this time I was contemplating the investigation of a series of cases with the Frei test and I purposed to allow the present case to progress in the hope that it would afford the necessary pus for the preparation of an antigen Fortunately for the patient the opportunity arose of obtaining the necessary antigen from another source within the following week and tartar emetic therapy was commenced on the eighth day from that on which he first presented Thisdelay and the reason for it require mention inasmuch as I feel that it had considerable bearing on the progress of the case

When treatment was started first the bubo had reached the size of a large hen's egg was acutely tender to the touch, and was associated with some low pyrexia The first few injections appeared to have little effect in arresting the inflamm and an increase in size and symptoms necessitated out treatment on the twenty third day from onset The general constitutional impairment was marked This patient also appeared unduly susceptible to the immediate toxic effects of the drug and no matter how slowly the injection was given it was followed by a bout of coughing and retching which lasted for anything up to ten or fifteen minutes

On the tenth day there appeared a small pin head ulcer in the coronal sulcus of the penis From it there was a slight serous discharge, negative for *S. pallida* and it disappeared altogether in forty eight hours

The first signs of response to treatment showed up around the thirty fifth day with some slight diminution in size and less tenderness around the periphery In other words the pericadenitis was subsiding first The treatment was maintained in full dosage, but the residual lesion in this case was of too big a nature for it to entirely disappear by resolution and signs of breaking down and central softening were soon evident The fluctuant area looked spontaneously on the forty seventh day and the fluid contents consisting of a watery yellow pus were expressed At this time, all signs of acute inflammation had subsided, and though the skin over the bubo was of the typical purplish hue, the tiny opening was sealed with a collodion dressing and gave no further trouble After one more subsequent injection the exhibition of tartar emetic was suspended as the patient made complaint of pain and stiffness in the arms and shoulders and in any case clinical appearances pointed to the local condition having reached the stage of involution Up to this stage a total of 36 gr of tartar emetic had been given The patient had returned to light duty by this time

For seven weeks from this point his condition remained practically stationary, the bubo mass showing little variation from day to day and in its inert form occasioned no discomfort but then there came a recrudescence of pain and redness over the swelling Further tartar emetic treatment, amounting to 10 gr given in eleven days was effective in producing an abatement of the acute symptoms and once more it was thought the inflammation had been arrested

A second relapse occurred a fortnight later—thirteen weeks from the initial onset—and this again yielded to a short course of tartar emetic amounting to

to [illegible] period of [illegible] days [illegible] involut[illegible] [illegible] but it was not until the end of the [illegible] week fr[illegible] [illegible] could be said to have been effected

This [illegible] was pl[illegible] [illegible] A very striking positive result was [illegible] a yellow neurotic [illegible] [illegible] weeks to disappear

The progress of th[illegible] [illegible] of some importance Finally [illegible] other uncomplicated case of lympho[illegible] [illegible] in which there was any delay in [illegible] appears more than a coincidence Secondly [illegible] on two separate occasions when [illegible] improvement on its resumption

*Case 7* —A [illegible] inguinale but of inguinal bubo secondary to a frank [illegible] description of it is included here as it responded [illegible] treatment

It was twelve days after the open penile sore first presented itself that the patient had an inguinal adenitis on the right side Repeated examinations [illegible] the presence of the *Spirochæta pallida* and the Kahn test was reported negative [illegible] this stage and later on The bubo itself, was indistinguishable clinically from a lymphogranuloma inguinale, having the same semi hard resilient feeling on palpation in the early stages and the same progressive increase in size Tartar emetic was employed from the date of its first appearance and 21 grains in all over a period of four weeks Softening of the bubo was [illegible] early and the policy of non interference was followed spontaneous breaking down allowed to take place and the contents of thick creamy cold pus expressed [illegible] the opening was sealed with collodion There was less constitutional disturbance as indicated by loss of weight and general malaise than in the [illegible] of lymphogranuloma inguinale

This patient gave a negative result when submitted to the Wassermann test

## General Discussion on Treatment

From the foregoing detailed description of my cases it will be seen that six proved cases of lymphogranuloma inguinale have been treated by intensive tartar emetic therapy The technique employed is based on that of Destefano and Vaccarezza [46], and of Gilkison and Sibley [47] the dose of the drug to be given being carefully weighed before each injection and dissolved in 10 c.c. or less of distilled water Sterilization was effected by heating the solution The speed at which the drug was allowed to enter the general circulation varied in individual cases according to the susceptibility In general the time of injection was the minimum possible without producing the premonitory symptoms of slight distress [illegible] of which I instructed my patients to indicate immediately should there be any feeling of nausea or a sense of tickling irritation in the throat Very rarely could the injection be concluded in less than two and a half minutes and the maintaining of the needle in the lumen of the vein for such a period was often no easy matter in a small ship rolling heavily

I did not attempt to produce the shock effect of a more rapid

[illegible] and Sork [illegible]
[illegible] paragraph [illegible] vinced of the [illegible]

[illegible] case was to work up as rapidly as possible [illegible] patient was receiving a maximum dose of 3 gr every third day [illegible] dose is exactly double that employed by the majority of [illegible] emetic in the treatment of lymphogranuloma inguinale [illegible] record in the literature of a similar intensive exhibition [illegible] any of the other conditions for which it is the accepted [illegible] unfortunate that the number of cases in which I have been [illegible] to try it is so small but I propose to consider in which way the results obtained in them point to its success or otherwise

In the first place, in three cases out of the six it has been possible to bring about recovery without recourse to sick list treatment i e the treatment has been ambulatory throughout This in itself is sufficiently unusual to call for special comment

If taken in conjunction with the details of the series of cases given in the appendix to this thesis, it is possible to make a comparison between the results obtained by intensive tartar emetic therapy, and by its administration in the more usual dosage, and also with the only other treatment which is represented therein—that of the arsenical novarsenobillon, given intravenously

Of twenty seven cases of lymphogranuloma inguinale —

Six cases in which a maximum dose of 3 gr of tartar emetic was employed show an average disability period of ten days

Eighteen cases in which a maximum dose of 1 5 gr of tartar emetic was employed show an average disability period of forty-one days

Three cases treated with novarsenobillon, show an average disability period of fifty two days

I consider the strict avoidance of any surgical measures in the treatment of the local bubo to be an essential factor in the successful treatment by tartar emetic of lymphogranuloma inguinale Should the gland mass [illegible] to suppuration I believe that it is advisable to avoid even aspiration, as diminution in the size of the fluctuant area can be observed to take place under the influence of the antimony The spontaneous rupture of the residual pus through the skin its total evacuation by aseptic digital expression and the immediate sealing of the small area of leakage with collodion dressing, I have found to give excellent results Local light pressure by means of a pad and an elastic bandage is a useful adjunct to treatment An elastoplast dressing left in position throughout would probably be ideal

As indicative of the specific effect shown by antimony in arresting the progress of the disease I would cite the following points from my own observation —

(1) A definite improvement, perhaps slow at first in the patient's

general condition This is not necessarily [illegible] very of the body weight, for as I shall presently [illegible] is in itself a symptom of mild poisoning with antimony

(2) A recession in size of the gland mass in [illegible] signs of acute infection therein

(3) Remissions of temperature occurring immediately following injections of the drug in one or two cases and its complete return to normal in a comparatively short time

(4) The fact that on several occasions in the early stages of the disease the patients volunteered the information that in their opinion, there was an increase in the dull ache of the bubo for some hours following injection

(5) The marked lessening of tenderness on palpation of the bubo and the greater definition of its margins, indicating a decrease in the degree of periadenitis present

(6) The tendency for the softened contents of a bubo to absorb under the influence of antimony I have experience of complete absorption in only one case, but in the others showing fluctuation there was always a perceptible decrease in the fluid contents as treatment progressed

In one or two of my cases, signs of mild antimony poisoning were undoubtedly present, but I think there is some justification for pushing the dosage to this extent if, by doing so, one is able to cut short a severe systemic illness, and avert a disabling and crippling affliction from persisting for weeks or months Joint pains and muscle pains were the signs of overdosage which I found most common Weakness loss of weight, and anæmia are also described as forming part of the picture in cases of chronic antimony poisoning, but as these are all features of the disease lymphogranuloma itself it is hard to determine where the one factor in their production ends and the other commences The only possible course is to pursue the treatment until the infection is killed, and then restore the general health of the patient None of my cases showed the diarrhœa described as a symptom of chronic antimony poisoning, nor the signs in the mouth such as glossitis with ulcers

Destefano and Vaccarezza were probably the first to advocate the use of tartar emetic in the treatment of lymphogranuloma inguinale They employ it as a 1 per cent solution, and commence with a dose of 5 c c (approximately ¾ gr) and then increase to 8 c c (approximately 1¼ gr) and to 10 c c (approximately 1½ gr), the last being the maximum dose employed Out of their series of 80 cases, 46 cleared up after 8 or less injections, 19 after 15 or less and 8 with from 16 to 32 They state that they very rarely saw toxic symptoms with such dosage They also note the tendency to spontaneous absorption of any fluctuant areas in the gland mass under the influence of antimony To assess the rapidity with which they achieved a cure is not easy, but they give the disability period in the cases in which treatment was instituted before softening had taken place, as being from one week to two months Apparently some of their cases

had first presented when well advanced, and in 7 of them fistulation was present before treatment was commenced Of these 7, 4 cleared up after two months of tartar emetic administration, and in the other 3 treatment was stopped at two months, and the gland mass allowed to slowly resolve They fail to make it quite clear whether such decision was influenced by hesitation to continue tartar emetic any longer, or whether it was just satisfaction that the infection was killed, and only involution remained to take place

Kinneard [48] working in Nassau (Bahamas) states that he has employed the 1 per cent watery solution of tartar emetic for four years and in his hands the drug has proved so satisfactory that he has not felt it necessary to experiment with other agents His patients are largely natives and he finds that hospitalization is rarely necessary Only in cases of ch are seen late has there been trouble with softening, and out of his last fifty cases only three have required aspiration

In the series published by Gibson and Sorley of cases of mixed bubo, treated by tartar emetic, the technique employed was based on that of Destéfano and Vaccarezza They modified it however, inasmuch as they administered the drug in such a time as to produce a slight immediate general reaction This they describe as comprising a dull ache at the shoulder laryngeal irritation with violent coughing, and sometimes nausea and vomiting By this modification they claim that the total dose of the drug required to effect cure is decreased

Following publication of their results, Stannus [19] wrote criticizing them In this letter he suggests that any beneficial affect which antimony may have on the progress of lymphogranuloma inguinale—and he seems to doubt it—could be attributed to this "shock" effect In support of this assertion he points to the good results reported by Hanschell from the use of protein shock therapy in the disease I feel however, that he bases this inference on very inadequate grounds as in no case reported by Gibson and Sorley, or by any other observer has the intravenous administration of antimony been followed by the rigor and sudden rise of temperature characteristic of protein shock My own experience is quite to the contrary for as I have already pointed out I have seen a resultant fall in temperature on several occasions after injection of antimony

Antimony in forms other than tartar emetic, has been tried in cases of lymphogranuloma inguinale De Bellard [50] recorded a case given stibenyl intravenously in successive doses of 1 10, 1 5, 20 20, 20 cg on alternate days, and the swelling which increased after the first injection thereafter steadily diminished till the glands were no longer palpable twelve days after the treatment had begun Later the same observer modified his favourable opinion and though he states that in the very early stages cure results from stibenyl, in those of a later stage its use is followed by involvement of other glands in the neighbourhood For such therefore he recommends excision followed by a course of stibenyl starting the day after operation

Henschell [51] has suggested the use of [illegible] treatment of lymphogranuloma inguinale He states that he [illegible] it by accident when using it in a case of gonococcal [illegible] there was a coexistent inguinal adenitis, and the latter [illegible] its influence He puts the patient to bed whether fever is present or not He gives 100 million killed typhoid bacilli as a first dose, which is usually followed in two hours time by a rigor and a rise of temperature to perhaps 104 F When necessary, a second and third shock is induced at intervals of a week He states that it is rare for it to be necessary to keep the patient in bed more than fourteen days, and puts the average duration of the illness as from one to three weeks Such a result indicates a very good degree of success but a straightforward comparison with that obtained by tartar emetic is scarcely possible In the first place he advances no details as to number of cases treated or the exact duration of them In the second place any disability period figures given for cases treated in a civil hospital will, in almost any disease, be less than for those treated in Naval hospitals or on board H M ships In the latter case the patient must be completely fit before discharge for he then proceeds straight to duty which involves work of a heavy nature

This point is well illustrated by the figures which Gibson [52] published in 1932 following a protracted trial of Henschell's treatment on cases occurring among naval ratings on the China station Of 41 cases treated by protein shock therapy, 11 cleared up without surgical intervention and showed a disability period of thirty four days 18 subsided after protein shock and aspiration, and took forty-three days, 12 cases were protein shock failures and required further surgical intervention i e incision or excision of glands

To follow the further experience of Gibson is even more instructive In the above-mentioned publication he notes that tartar emetic has been suggested as a line of treatment by Destefano and Vaccarezza but draws attention to the toxic nature of the drug In 1933 together with Sorley, he published a further series of cases, this time treated by tartar emetic given intravenously, and is convinced of its value He then finds himself in a position to compare the results he has obtained from three different lines of treatment over a period of years and these he embodies in the following instructive table —

| Cases | Year | Method of treatment | Average disability period |
|---|---|---|---|
| 4 | 1926 | Method 1 Excision of affected inguinal glands | 90 0 |
| 48 | 1927 28 29 and 1931 | Method 2 Protein shock therapy by intravenous T A B vaccine | 46 5 |
| 36 | 1931 32-33 | Method 3 Intravenous tartar emetic | 28 8 |

From the fact that but a small percentage of all that has been written about lymphogranuloma inguinale in the last few years bears on its treatment, it would seem that the majority of observers are still content to maintain an attitude of *laissez faire*. On the Continent surgical measures still seem to be in general use. In the case which Auwyl-Davies and King published in this country as recently as 1933 [53] the treatment consisted of fomentations and aspirations and it ran a course of sixty four days.

In the New World interest in lymphogranuloma inguinale has become very great. It seems to date from the publication by Pardo Castello [54] of his observations on the disease in Havana. This writer suggests the use of radiotherapy if the case is seen previous to suppuration setting in but thereafter has recourse to surgical treatment. He gives no statistics but appears to regard several months as the usual course of the disease.

De Wolf and Van Cleve [55], reporting on their observations in a series of cases in Cleveland, U.S.A., in 1932, consider that the results from both surgical treatment and radiotherapy are disappointing. At the time of publication they had commenced to try tartar emetic in one or two cases and felt that the results were promising.

Cole [56] working in the same clinic, published a further series of cases in 1933. It is disappointing that in neither of these otherwise very valuable contributions are precise details given of the duration of illness. Cole considered that patients with bubo formation seen early responded comparatively well to surgical excision of the involved glands. He also refers to the benefit to be had from tartar emetic therapy when he summarizes his conclusions with regard to treatment as follows: 'In my estimation rest in bed, promotion of free drainage, perhaps along with partial extirpation of the nodes involved, and the use of antimony and potassium tartrate intravenously gives the best results.'

Dr. Grace [57] of the New York Hospital, who has taken an active part in the recent experimental work on lymphogranuloma inguinale in the United States has informed me in a personal communication that a trial is to be given to the employment of convalescents serum in the treatment. So far no results have been published.

Levaditi and Mutsler [58] report on the results obtained in six patients by using intravenous injections of Frei test antigen in their treatment. Each were given 1 (in one case 5) injections commencing with ½ c.c. of an emulsion of infected monkey brain, and working up to 1 c.c. as the maximum dose employed. They state that beneficial effect was evidenced by recession of the bubo mass, and in the only two cases in which precise dates are mentioned, the disability periods seem to have been eleven and twenty four days. Their technique may be considered as going one step further than that of Hanschell's inasmuch as the substance used to induce a 'shock' effect was specific for the disease. They conclude on a note of caution pointing out that the six patients have not been under observation

long enough to exclude the possibility of a relapse. Then in a footnote to their article they report a relapse in one of their patients and this would appear to have discouraged them for they go on to reassert the belief that in surgical treatment lies the only sure hope of effecting permanent cure. In expressing this conviction they are at one with the majority of continental workers.

To turn to the results of treatment reported by Fleet Surgeon Godding in 1896 [59] is to realize just how small a measure of progress has been made since then. That the series of 11 cases of 'non venereal bubo' which he described then really comprised cases of lymphogranuloma inguinale it is fairly safe to assume. His treatment consisted of oral administration of iron and arsenic, and he stressed the benefit to be had from delaying local interference as long as possible, and only resorted to incision in persistently fluctuant cases. His 11 cases showed an average of 44 days sickness: the 27 cases of lymphogranuloma inguinale included in the Appendix to this thesis have an average of 36.

That his results compare favourably with those of many observers of more recent years is probably due to his preferring systemic to local treatment. It is also of interest to note that the form of systemic treatment which he chose—the oral exhibition of arsenic—is the precursor of the intravenous use of antimony in more than one of the conditions for which the latter is now the accepted specific remedy.

## Summary

The introduction to this thesis traces the evolution of opinion in the profession, both in this country and abroad, whereby lymphogranuloma inguinale has come to be accepted as a separate clinical entity—an infective disease spread by venereal contagion.

The main features in the diagnosis of the diseases are discussed, and are amplified by personal observations on the disease as it has been seen occurring in naval ratings.

The results are reported of an investigation by the Frei test of a series of fifty two cases of inguinal bubo and evidence advanced of the specificity of the test in lymphogranuloma inguinale.

A brief resume is given of the experimental work on animal inoculation which has shown the disease to be due to a filterable virus.

Detailed case notes are given of six cases of lymphogranuloma inguinale showing their progress under intensive treatment by tartar emetic given intravenously. The dosage and rapidity of exhibition employed are greater than in any other technique reported in the literature. By its use, cure was effected in three cases without recourse to treatment in bed and the disability periods of the remaining three compare favourably with those reported by other observers. It is claimed that the response to treatment shows several features which support the contention that tartar emetic

Cases of [illegible] Reaction of [illegible]

| | | | (1) | (5) | (6) | (7) | (8) | |
|---|---|---|---|---|---|---|---|---|
| [illegible] | [illegible] | [illegible] | [illegible] of [illegible] | No. of days on which last dose administered | [illegible] | Maximum dosage and each main dose | [illegible] | [illegible] |
| [illegible] | [illegible] | Lymphogranuloma inguinale | Yes | Nil | Tartar emetic | 6 gr 3 gr | Positive | [illegible] months |
| [illegible] | [illegible] | Ditto | Yes | 23 | Tartar emetic | 28·5 gr 3 gr | Positive | 18 months |
| [illegible] | [illegible] | Ditto | Yes | Nil | Tartar emetic | 24·5 gr 3 gr | Positive | 18 months |
| [illegible] | [illegible] | Lymphogranuloma inguinale | Yes | 10 | Tartar emetic | 22·0 gr 3 gr | Positive | 14 months |
| [illegible] | [illegible] | Lymphogranuloma inguinale | Yes | Nil | Tartar emetic | 10·5 gr 3 gr | Positive | 15 months |
| [illegible] | [illegible] | Ditto | Yes | 2 | Tartar emetic | 64·0 gr 3 gr | Positive | 4 weeks |
| [illegible] | [illegible] | Ditto | Yes | 10 | Tartar emetic | 7·5 gr 1·5 gr | Positive | 18 months |
| [illegible] | [illegible] | Ditto | Yes | — | Tartar emetic | 10 gr 1·5 gr | Positive | 16 months |
| [illegible] | Stoker | Ditto | Unrecorded | 1 | Tartar emetic and incision | 13·0 gr 1·5 gr | Positive | 10 months |
| [illegible] | Marine | Ditto | Yes | 31 | Tartar emetic and incision | 8·0 gr 1·5 gr | Positive | 18 months |
| [illegible] | Able Seaman | Ditto | Unrecorded | 31 | Tartar emetic and incision | 1·5 gr 1·5 gr | Positive | 17 months |



| [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
|---|---|---|---|---|---|---|---|---|---|
| [illegible] | [illegible] | Lymphogranuloma inguinale | Dead | 12 | Tartar emetic and incision | 180 gr | 1·5 gr | Positive | 9 months |
| [illegible] | [illegible] | [illegible] | [illegible] | 9 | [illegible] | 10·5 gr | 1·5 gr | Positive | 11 months |
| [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |

APPENDIX

exercises a specific action in arresting the progress of a lymphogranuloma inguinale infection

Eighteen other cases of lymphogranuloma inguinale, in which tartar emetic was employed in the treatment, have been followed up, and statistical details obtained from which it is possible to advance further evidence of its value

Comparative figures are presented, showing the inferior results obtained by recourse to surgical measures, as opposed to systemic treatment

In the general discussion on treatment a review is given of the various methods so far employed

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# THE ECOLOGICAL OUTLOOK ON EPIDEMIOLOGY

By Surgeon Rear Admiral Shelton F. Dudley O.B.E. M.D. F.R.C.P. D.P.H.

Ecology is generally defined as the study of the relationship [illegible] in the various living organisms in an environment and of their relation to their animate and inanimate surroundings. Bews (1935) in an interesting book called "Human Ecology" says that environment, function and organism are a fundamental biological triad which must be studied as one complete whole and this study is essentially what we mean by ecology. In this sense ecology is rather a point of view or attitude of mind than a definable science. Indeed all biological phenomena can be regarded from the wide holistic or ecological aspect in addition to the limited viewpoint of the super-specialist. The biochemist, for example, as he racks his brains to devise some process which will help him to arrive at the structural formula of a new compound that he has isolated from an animal's body is thinking as a chemist pure and simple. When he reflects on how the properties of his new compound helps the animal in its struggles with the environment and other animals, he is thinking ecologically.

Owing to the ever increasing accumulation of facts and the ever growing unwieldiness of scientific literature it becomes more and more difficult to

[1] Presidential Address to the Section of Epidemiology and State Medicine. Reprinted from the *Proceedings of the Royal Society of Medicine* vol. xxx p. [illegible] Sept. of 1937 p. 11) by kind permission of the Honorary Editors.

[illegible] would be [illegible] attempt an [illegible] the subject [illegible] with Johan Hjort (1920) [illegible] sooner or later every student of natural history must face and [illegible] the great problem of how to orient his own particular branch [illegible] with respect to the principles of science in general

[illegible] Epidemiology especially has to draw on the data and use the methods [illegible] other sciences, and the epidemiologist has to try to keep all the [illegible] involved in the origin and distribution of epidemic and endemic [illegible] view at the same time, and take care that each factor is seen in [illegible] perspective In fact scientific epidemiology is medical ecology

Every disease and epidemic is a complex of numerous variable factors [illegible] strictly true to say that a specific case of pneumonia was caused [illegible] chill or that one of typhoid fever was due to eating oysters—even [illegible] it be known that but for the chill or the oysters no illness would [illegible] contracted We know that no illness could have arisen had not the [illegible] germs been present and the patient's anti-microbic resistance been [illegible] low enough to permit of the germ's invasion Similarly all epidemics are [illegible] primarily by the type and distribution of the whole parasitic fauna and [illegible] by the type and distribution of the various orders of host-resistance [illegible] the total parasitic flora and fauna and by the prevailing environmental [illegible] factors such as the density and motion of the population, the weather [illegible] and food supply These environmental conditions are secondary factors [illegible] entirely modifying the mutual reactions of the primary factors—to [illegible] microbic invasiveness and host resistance According to time and [illegible] individual epidemics may be mainly originated by changes in dissimilar [illegible] factors At one time a drop in host resistance may be the main factor [illegible] involved at another time it may be a rise in parasitic virulence while at [illegible] some other time or place there may be little change in herd-immunity or [illegible] parasitic quality, but a similar exacerbation of disease may be caused by a [illegible] period of bad weather favouring microbic transmission or by a famine [illegible] reducing the non-specific resistance of the population to parasitic attack

## The Measurement of Epidemic Factors

A really scientific description of an epidemic would involve our being able to measure quantitatively all the causative factors and their rate of change Hopeless as this may appear in our present state of knowledge there is no need for absolute despair A start has been made in estimating the relative weight of some of the factors which determine epidemics In the case of diphtheria and scarlet fever for example herd immunity can be gauged by Schick and Dick test frequencies By the use of animal protection tests, it is possible to discover the geographical social and age distribution of immunity to many virus diseases, and in malaria spleen rates can be used as an index of local herd immunity The virulence of

many [illegible] parasites can be measured on laboratory animals and is often [illegible] a reliable index of their power to damage human beings [illegible] differences in the laboratory virulence of different strains [illegible] pneumococcus, dysentery bacillus and salmonella bacteria are found to be correlated with the type of epidemic they may produce in man.

Many environmental factors—besides mere atmospheric changes in temperature humidity pressure and so forth—are measurable. For example population density may be given as numbers per square mile floor-space per inhabitant of a dormitory or number of individuals per room &c. The Registrar General's Statistical Reports show how the incidence of infectious diseases such as cerebrospinal fever and pulmonary tuberculosis generally increases with number per room but there are many intriguing exceptions to the rule. Another environmental factor which must have increasing weight in these days of travel and rush is what Stocks has called the circulation factor. This factor depends on the amount range and type of movement and intermixing among the individuals in the herd and on the amount of migration into and out of the community. This factor so far baffles all attempts to measure it but one sub factor in the circulation factor can be estimated, namely the rate at which fresh members enter and leave a herd. Of this I will speak later.

Food and water supply are still of paramount importance as vehicles of infection in backward countries and to our shame, milk is still an important source of tuberculosis and other diseases in England as witness the recent epidemic of typhoid fever in Bournemouth. I do not want to dwell on sanitation to day but the importance of defective sanitation in medical ecology even in the most progressive of countries must never be forgotten.

Food or rather lack of it and defective dietaries are believed by some authorities to lower herd immunity to infectious diseases. Attempts to measure the relative degree of herd malnutrition in different places and among social classes have been made by taking censuses of the family budgets or noting the incidence of known deficiency diseases such as rickets anaemia or dental caries. In this connection a pretty method of measuring vitamin A deficiency is instructive. Wald (1934) has shown that vitamin A is an essential constituent of the visual purple of the retina and the vitamin is therefore necessary for normal night vision in the dark adapted eye. Jeans and Zentmire (1931) have used this discovery to estimate the amount of latent vitamin A deficiency in groups of children. They devised apparatus for measuring a subject's capacity for seeing dim lights in a dark room. It was found that children who were suffering from night blindness were promptly cured by the administration of vitamin A. Hence the frequency of night blindness could be used as a measure of the degree of latent vitamin deficiency in the herd.

The medical and agricultural entomologist have realized the importance

of ecology to a greater extent than any other class of zoologist The ecology of insect and other vectors of disease is too big a subject to do more than mention here and moreover I have touched on it elsewhere (Dudley, 1934) It may be pointed out however that all the various factors which operate in the one host—man also operate in the other hosts—mosquito tick, snail &c That is to say, the whole epidemic or disease complex is complicated by having to take into consideration the density resistances, incidence of infection circulation factor malnutrition, &c of both the intermediate and the definitive host—man is as much the vector of mosquito malaria as the mosquito is the carrier of human malaria

To conclude In spite of the great difficulties in the way of satisfactorily describing any epidemic many of the factors which determine the distribution and type of infectious disease in the community are less imponderable and easier to measure than they were at the beginning of the century

### Natural Active Immunization

On the first occasion on which I had the privilege of addressing this Section (Dudley 1929) the fact was stressed that man and other animals adapt themselves to the pathogenic microbes in their environment by acquiring a specific immunity to each species of potentially pathogenic microbe with which they make contacts According to the kind of microbe and other circumstances the process of acquiring immunity may be accompanied by a more or less severe reaction which we recognize as a specific infectious disease or, in many bacterial and virus infections immunity is more often than not, acquired by latent infection without any recognizable signs of disease Clinical disease or patent infection may be called patent immunization subclinical carrier inapparent, or latent infection is also the process of latent immunization The two together comprise natural active immunization I make no excuse for again harping on this subject because it is still far from being generally appreciated that natural active immunization is the most important host or human factor in the evolution and decline of epidemics and in the distribution and severity of all infectious diseases

In certain infections, under conditions when latent immunization predominates over patent or symptomatic immunization the process not only produces and increases herd immunity without evidence of the fact, but may be necessary to prevent those already immune from losing their acquired resistance to clinical attacks Moreover the absence or relative infrequency of any patent or latent infections in a community may allow the herd immunity to decline to a dangerous level without any warning Hence a certain amount of continuous latent immunization is necessary for the maintenance of the herd's immunity Briefly the rate of acquiring or losing specific herd immunity is determined by the intensity of the immunizing influences in the environment

As with specific acquired immunity, true natural genetic resistance to

particular invasion must be very variable from individual to individual, but in contrast to acquired herd-immunity racial or genetic herd immunity must remain relatively constant in communities where mating is at random.

One of the chief defences against microbes is natural genetic immunizability which is the facility of acquiring specific immunity should the environmental conditions at any time require it. In the case of diphtheria although immunizability as represented by the capacity to produce diphtheria antitoxin after injections of diphtheria prophylactics is extraordinarily variable, yet I never found an individual in whom such a capacity was altogether lacking. It may be assumed therefore that everyone has the power of making diphtheria antitoxin. Nevertheless in the more sheltered social classes or in areas which are uninhabited by *C. diphtheriæ*, the majority of the members of a community may go through their lives without ever having had need to exercise their natural genetic immunizability against diphtheria.

The matter is still further complicated by the fact that immunizability itself can be increased by appropriate stimuli and thus become partly a hereditary innate, and partly an acquired potentiality. It is a general immunological law that subjects that have had a dose or two of antigen short of producing the homologous antibody, or who having once possessed the said antibody, have subsequently lost it will for ever after respond more rapidly and extensively to minimal doses of the same antigen. This is Glenny's well established law of primary and secondary stimuli which holds good for natural active immunization in the field as well as for artificial immunization in the clinic or laboratory. The fact that specific immunity could be acquired latently by environmental stimuli of the right sort was proved experimentally as regards natural human diphtheria antitoxin for the first time at Greenwich (*vide* Dudley 1932). At that time the theory of latent immunization received considerable opposition, and many preferred the hypothesis that natural immune bodies and protective substances appeared in the blood as a hereditary genetic growth phenomenon —a ripening of the blood serum as the Germans term it. Although it is logically impossible to prove an absolute negative and dogmatically to declare that specific antibodies, as such, never appear as a purely genetic character, yet as time passes the assumption that specific antibodies are only stimulated by their homologous specific antigens is proving to be a valuable working hypothesis for discovering the presence and distribution of many bacterial and viral agents of disease in human populations.

To-day, the finding of antitoxins, protective substances or other antibodies, in the serum of an individual is generally accepted as valid evidence that the said individual was at some time in his life patently or latently infected by the homologous micro-organisms. As an example we may take what is perhaps the most startling and unexpected discovery in modern medical ecology. By means of the mouse-protection test yellow fever immunes were discovered in the wilds of South America. This

[illegible] confirmed the fact that yellow fever exists as an enzootic [illegible] This type of the disease is spread by wild species of mosquitoes in areas where the domesticated *Aëdes aegypti* which was previously supposed to be the only vector of yellow fever does not exist Moreover it is evident that there must be a reservoir for the virus in some species of monkey or other wild animal as otherwise the virus would be unable to maintain its existence in districts so sparely populated by *Homo sapiens* As Soper (1936) who gives a good summary of this work says "The epidemiology of yellow fever was during many years and until quite recently, one of the best examples of a closed argument in all medicine The belief that there was only one specific insect vector which occupied one very restricted niche—the domestic water vessels—the permanence of the immunity conveyed by an attack of yellow fever the apparent rarity of it in symptomatic infections, and lastly, the dramatic success of preventive measures based on these premises, made most people confident that there was nothing more of any consequence to be learnt about the epidemiology of yellow fever Nevertheless some of the epidemic and clinical characters of yellow fever had always raised doubts in my mind if the above really did tell the whole story There were the unexpected reappearances of yellow fever after its successful eradication from South American towns and reports of sporadic cases of supposed yellow fever from regions in which *Aëdes aegypti* had not yet been found Moreover the very short period during which a human yellow fever patient can infect mosquitoes combined with a very high case fatality or a life long immunity always made me feel suspicious that there must be some undiscovered reservoir of the virus in order to explain how it was that natural selection had not eliminated yellow fever from the New World long ago

In connection with this subject last year (Dudley 1935) I used rabies as an example of a supervirulent disease which should have been eliminated by natural selection long ago unless there exists a reservoir for the rabies virus among some wild animal species in which rabies can cause carriers or mild chronic infections In the peculiar epidemic of rabies in Trinidad which is spread by rabid vampire bats it has now been shown that the bat itself could serve as reservoir for the rabies virus since De Verteuil and Tinch (1936) report that bats have remained active and infective carriers of rabies for over five months

## Premunition

Before leaving the subject of herd immunity another host parasite relationship should be mentioned There are many diseases which Sergeant and Parrot (1935) have classed together as "maladies à prémunition Infections of this class are characterized by having long periods of latency, either as incubation periods, long periods of remission between attacks months or years of convalescent carrier state, or carrier infection only During the periods of latency the hosts are completely immune to

[illegible] parasite even if it [illegible] [illegible] [illegible] species This characteristic has [illegible] protect domestic herds and animals For example naturally [illegible] piroplasmosis of cattle in North Africa is invariably fatal [illegible] cattle can be protected by inoculating them with an attenuated strain of the causative organism which produces a more or less chronic latent infection The second characteristic of "maladies à pronunciation" is that once cured the host immediately returns to his original degree of susceptibility and is just as liable to infection as he ever was

This class of disease includes many protozoal and spirochætal infections In general the production by protozoa and spirochætes of definite specific antibodies or permanent protective adaptations in the host's tissues is ill-proven or feeble and transitory as compared with many of the bacteria and most of the viruses Among human diseases malaria and syphilis are the most important premunizing diseases Some syphilologists [illegible] such that the only certain test for cure for syphilis is a positive [illegible] in the premunity state immunity to symptomatic illness is only purchased at the expense of a continuous subclinical infection and therefore all the [illegible] in the herd remain as potential sources of infection for [illegible] susceptibles From a parasite's point of view premunity would appear a more satisfactory arrangement than the permanent immunity to latent as well as patent infection produced by such a disease as yellow fever in which after a short acute illness the parasite is destroyed and the host for ever after is useless to the parasitic species Diseases like diphtheria or poliomyelitis exhibit an intermediate host-parasite relationship between premunity and complete immunity to reinfection in that on a first attack by this class of parasite although the host rapidly develops a more or less permanent resistance to patent or symptomatic reinfection yet he is still susceptible to carrier or latent infection and thus remains a useful inhabitable host for the parasitic species in question

## Density and Rate of Change of Population

Since Farr's time the density of the population has been recognized as an important environmental factor in determining the amount of infectious disease in a community Nevertheless unless the relative weight of the other factors which influence morbidity in the community is known and more especially the intensity of natural immunization in the herd the association of population density and infectious disease will present many strange anomalies Exceptions to the density "law" are often found when urban and rural morbidities are enquired Very often the prevalence—and what is more important the severity—of an infectious disease is at times greater in sparsely populated districts than in the overcrowded cities This anomaly is largely explained by the scarcity or absence of infection in the community for long periods resulting in a low intensity of natural immunity so that when virulent or epidemic strains of a specific infection in

gain a footing, they cause a greater proportion of severe and patent infections in the country than in the town, where mild and latent infections more often predominate This inference is supported by the low Schick and Dick test frequencies so characteristic of rural as compared with urban communities The morbidity and severity of disease in town and country should also be considered in relation to Burnet's law (*vide infra*) This is also probably why the weedy cockney recruit often stands up better to the bacterial environment of the fighting services than the hearty well-nourished countryman In fact, in the Navy the fishermen reservists from the distant Hebrides and north of Scotland are notorious for "going sick" during their periods of training in the south with measles and other common childish ailments

In the Service training establishments there is a high incidence of common minor respiratory infections which are entered in the sick records as tonsillitis, chills influenza, catarrh and so forth These minor infections generally increase with population density What is more important however is that the proportion of such minor infections, to be followed by the major complications—otitis media, pneumonia and acute rheumatism—becomes much higher as the population density increases Glover (1932) has noted the same phenomenon outside the Services and he considers that the relatively greater frequency of these serious complications is the most significant and alarming indication of overcrowding At first I was of opinion that the high incidence of disease in the Service depots was due to overcrowding pure and simple In public schools, the incidence of minor infections and still more of their serious sequelæ as mentioned above, is very much lower than among Service recruits It was assumed that this must be because the public school boy was given more spacious accommodation but when the matter was looked into it was found that the training establishments gave as much space per boy as in certain public schools whose morbidity was not exceptional Public school boys should be more susceptible to infection in general than Service recruits who being older and coming from a less sheltered class, have been exposed for a longer time to immunizing influences of a more intense nature Differences in population density are therefore inadequate to explain the differences in the morbidity of the two classes Although there are many differences in the life and habits of public school boys and recruits, yet the only one whose weight seems to be great enough to account for the excess of morbidity in the training establishments is the difference in the rate of change of population

The more rapidly recruits pass through a training establishment—or what is the same thing the shorter the period of training—the population density remaining constant the greater is the incidence of all infectious diseases Also, it may be remarked that injuries and accidents increase with the rate of change of population for practically the same reason as do diseases Recruits on joining the Services have to learn to manipulate all

sorts of apparatus and machinery and to perform [illegible] physical exercises, and until their neuro-muscular co-ordinations and reactions are adapted to the Service environment, the accident rate of trainees is high compared with that of trained men

Similarly, the reticulo-endothelial system and other tissues responsible for resisting parasitic attack have to be educated to deal with the pathogenic micro organisms which they meet under the conditions of close living inseparable from Service life This adaptation is accompanied by a great exacerbation in the morbidity of all kinds of infections—a phenomenon which I call the recruits epidemic Adaptation to the naval bacterial environment takes place pretty quickly, because within two years of entry, the incidence of most diseases among trained sailors who have passed through the recruits' epidemic is as far as the available statistics go less than among adults of similar age and class ashore although by force of circumstances the sailors live under conditions which according to the latest standards for dwellings ashore would be considered gross overcrowding The chief factor which determines the differential morbidity of infectious disease in training ships, public schools, and other institutions appears to be the rate at which fresh susceptibles are added to the community This factor varies directly with the rate of change of population and inversely with the herd immunity of the new additions to the population In the boys naval training establishments the period of training may be less than a year which is only a fifth or a sixth of the time a boy stops in a public school The much greater rate of change of population among the naval boys should outweigh the lower herd immunity of the public-school boys, and should make the rate of addition of susceptibles to the training establishments greater than in the public schools This hypothesis receives support from work by Topley, Greenwood and others on experimental epidemics among mice which prove the importance of the rate of the addition of fresh susceptibles in determining the mortality rate in herds of mice In the population at large, outside the Services the recruits are the newborn infants In this connection I have been struck by the fact that in the dense urban populations that exist in some foreign countries as for instance Canton city in China or the urban areas of Malta, the prevalence of acute infectious disease is so much smaller than the density of the population and low standards of hygiene and living would lead one to expect as far as can be judged from the cases admitted to hospitals and the amount of sickness among the native employees of the Admiralty and other bodies But in these environments the infantile mortality and loss of child life are truly colossal This mortality is analogous to the recruits epidemic and is perhaps the price which the adult population pays for its relative immunity Here however, we are dealing with the general biological law that the struggle to survive is always most intense among the immature members of the species, whether these are the seedlings in the forest the tadpoles in the pond or the babies in the slum

## MALNUTRITION AND INFECTIOUS DISEASE

Mal[illegible] [illegible] [illegible] in [illegible] to day and [illegible] apparently [illegible] that a great improvement in the [illegible] [illegible] take place if everyone was supplied with and compelled to use a [illegible] diet It is rather a strange thing that so little is really known about the [illegible] of herd malnutrition on the morbidity of infectious diseases seeing that the two fundamental physiological needs for the existence of any species [illegible] adequate nutrition and reproduction and that of the two the former is [illegible] more urgent, since a species can exist for a generation or two without [illegible] itself but cannot exist for a week or two without eating Cathcart (1935) as a physiologist says "The principal benefit accruing from dietary improvement lies possibly in increased resistance to the ravages of disease I do not believe, however, that the incidence of diseases like scarlet fever diphtheria, measles &c, will be reduced"—which would seem to imply that improved nutrition would not affect epidemic infections [illegible] it would diminish the amount of non-infectious conditions Mellanby (1931) believes that definite vitamin lack is a potent factor in lowering the resistance to pyogenic and respiratory infections and McCarrison (1936) states that gastro intestinal infections are largely caused by faulty diets Topley Greenwood Hill and Wilson (1936) were unable to find any significant differences in the experimental epidemic mortality among the herds of mice fed on adequate and deficient diets Robert Hutchison (1936) as a clinician is of opinion that there is only one disease (tuberculosis) in which it is certainly true that resistance is increased by improved nutrition Hutchison clarifies the subject by distinguishing between under nutrition or deficient calories and malnutrition which is due to vitamin or other deficiency in the diet He also issues a timely caution that over nutrition is perhaps as great a cause of illness as malnutrition and we are already hearing of disorders attributed to hypervitaminosis Finally Friend (1936) found no convincing changes in the morbidity of infectious disease before and after improving the diet of the Christ's Hospital schoolboys

If we turn back for a moment to the problem of the differential morbidity of naval recruits and public school boys the above evidence makes it scarcely possible to attribute as has been done, the excess of morbidity among the former to an undiscovered defect in the diet To day all Service diets are most carefully scrutinized to see that they fulfil modern requirements as regards quality As regards quantity the energy value of the diet given to naval boy seamen is over 1,000 calories After Dr Hutchison's warning it would appear easier to attribute any ill-health among boy seamen to overfeeding rather than to malnutrition[1]

It is fair to conclude that under nutrition or malnutrition short of real starvation and gross vitamin or other deficiency cannot be a factor of much significance in the incidence of most acute bacterial and virus infections in England which comparative statistics show is relatively the best fed [illegible] in Europe In the case of epidemics of protozoal disease among

[illegible] may be in [illegible] epidemic [illegible] associated with famine [illegible] everywhere [illegible] malignant influenza [illegible] course of [illegible] disease

## [illegible] Variation

The last problem which I want to discuss is how far does microbic variation within a so-called species of pathogenic organism affect the incidence and characters of a specific herd-infection In the earliest days of bacteriology Pasteur surmised that variations in epidemic phenomena might be caused by changes in the causative microbes Then came the great advances in immunology which led to the realization of the wide range of variation in natural and acquired resistence to infection This and the apparent immutability of bacterial species according to the coarse laboratory technique of early days, supported the hypothesis that variations in host-resistance were a more potent and frequent cause of epidemic phenomena than variations in parasitic character—the soil was more important than the seed in determining what crop of sickness would be reaped

The difficulty of being sure that bacterial variation is the main cause of observed differences in either sick individuals or herds is indeed great It is impossible to say to what degree any differences in the clinical features of the same specific illness which are exhibited by two patients are determined by variations in the biochemical characters dosage, and mode of entry of of the infecting organism, or by variations in the immunity reactions behaviour and treatment of the two patients, or by variations in the physical environment which each patient and his parasites happen to occupy The mere cataloguing of these variables all of which have more or less influence in painting the clinical picture of an illness makes evident the complexity of the problem and the necessity of using the utmost caution in attributing variations in the clinical picture to correlated variations in the physiological characters of bacteria

## Clinical Picture and Bacterial Type

In the case of epidemics and groups of patients the problem becomes statistical and more hopeful of solution It is tolerably certain that changes in the morbidity fatality, and clinical type of a disease will happen from time to time and from place to place often depend largely on the predominance of different strains or variants of the specific pathogenic organism Perhaps the best established instance of this is the difference in the case fatality caused by the serological types of the pneumococcus Should an individual succumb to a Type I pneumonia while the patient in the next bed survives a Type III infection we should be wrong to infer that the Type I pneumococcus was the more virulent organism because we know if a large enough series of pneumonia cases

are collected at random, that the case fatality will be much higher among the sub group of patients suffering from Type III pneumonia than among the sub group suffering from the Type I infection From this and other evidence it is a legitimate inference that, were it possible to hold constant antibacterial resistance and all other factors, *Streptococcus pneumoniæ* Type III would always produce a more serious illness than *S pneumoniæ* Type I Therefore differences in the frequency distribution of the serological types of pneumococcus largely determine the clinical type and fatality of pneumonia outbreaks Diphtheria is also a disease whose clinical and epidemic character is to a large extent determined by the prevailing types of the diphtheria bacillus Diphtheria is also responsible for the concept that there are epidemic and endemic strains of specific bacteria The epidemic strains of *C diphtheriæ*, in addition to producing more extensive and severe outbreaks tend to cause much higher carrier rates than the common endemic variants A strange anomalous character of the epidemic diphtheria bacilli which had invaded a certain naval school was their ability of causing latent carrier infection in certain Schick-susceptible subjects without stimulating the appearance of antitoxin in their blood Such subjects must therefore have had some line of defence against diphtheria bacilli other than circulating diphtheria antitoxin Also these epidemic types of diphtheria bacilli must have been poor latent immunizers, compared with the endemic type where the co-existence of the carrier state and a positive Schick reaction was almost unheard of This inference that some epidemic diphtheria bacilli were poor antigens as regards the stimulation of human diphtheria antitoxin was supported by the observation that subjects who had been naturally or artificially immunized lost their Schick immunity more frequently when the epidemic "gravis *C diphtheriæ* was predominant than when the endemic "mitis" *C diphtheriæ* was the prevalent cause of latent infections It would seem therefore the greater virulence or invasiveness of some epidemic types of diphtheria bacilli must depend on a character other than the possession of a greater toxigenicity (*vide* Dudley May, and O Flynn, 1935)

### Parasitic Mutation A Cause of Epidemics

No one however, now denies that many epidemic phenomena are the result of changes in the predominance of the several variants of the same named species of organism This is a truism which must be kept distinct from the exceedingly difficult problem How far are these numerous variants, types, groups and strains of a so called species of micro organism constant and immutable, or how often and under what circumstances is one variant transformed into another? In the laboratory numerous variations or mutations can be induced deliberately, as well as happen by chance, in pure cultures of micro organisms, but there is little reliable evidence from the human field that the characters of an epidemic, its origin course or subsidence are influenced by direct mutations or continuous gradual

[illegible] the best [illegible] ing the last [illegible] result [illegible] selection of fresh varieties of para[illegible] point of view [illegible]ophy and his col[illegible] of a new strain of *Bact[illegible]* [illegible] ecologist [illegible]This new bacterial [illegible] of damaging its host but [illegible] such hosts of a far higher order than [illegible] The observation is therefore of doubt[illegible] parasitic virulence, though usually increasing, [illegible] activity, [illegible] does always do so.

The best evidence [illegible] human subject [illegible] variation of a parasite species may be the [illegible] supplied by observations which have been made [illegible] in the use commonly employed as a therapeutic agent. [illegible] is therefore in which man can be used legitimately as an experimental animal. James Nicol, and Shute (1936) by taking advantage of the possible greatly to increase the virulence—or [illegible] as they prefer to call it—of a benign tertian strain which was [illegible] virulence when at first isolated. After the exhibition [illegible] of asexual forms of this parasite appeared [illegible] in the blood of the patients who were artificially infected with [illegible] parties which were fed on these patients [illegible] and [illegible] than normally and passed on this [illegible] to [illegible] doses, and for a longer time than was the [illegible] in ordinary cases of benign tertian malaria. Charts showing [illegible] temperature charts and blind passage [illegible] by hyperpyrexia and by hyperpyrexia combined with [illegible] characters as those exhibited by the cases of [illegible] in the 1934-35 Ceylon outbreak, all bear out [illegible] view of great malaria outbreaks is the change in the [illegible] that is to say the direct mutation of [illegible] strains of the causative microorganism. In different [illegible] home of malaria it appears essential that this primary [illegible] with a superabundance of the mosquito vector and [illegible] of immunity, as indicated by a low spleen rate in the population [illegible] on the other hand, thinks that these big malaria [illegible] suddenly and that cases appear simultaneously over such [illegible] that their origin can only be explained by an explosion of [illegible] which in some way associated with a sudden rise in the [illegible] temperature. [illegible] supports his ingenious hypothesis with suggestive [illegible] on the spot. However, the fact that when malaria [illegible] the mosquito vectors have escaped the abnormal biological [illegible] multiplying logarithmically at an excessive rate so that [illegible] with a superabundance of

female in [illegible] contains [illegible] to account [illegible] epidemics of malaria. [illegible] data is at hand one must preserve an open mind as to which of these two hypotheses describes the facts most accurately. Very possibly, as so often is the case, both will be found to be partly true and an exacerbation of the relapse rate to be yet another factor for consideration in the evolution of a malaria epidemic.

One of the best examples of an epidemic which almost certainly arose by an alteration in the characters of the causative bacterium, is to be found in the old naval records of sickness (Dudley, 1931). In 1860 there was recorded a unique and unprecedented epidemic of pulmonary disease from the Mediterranean Station chiefly confined to one ship which returned 219 men diagnosed as cases of 'phthisis or 'cachexia pulmonis'. Only six of those patients died, a 3 per cent. fatality at a time when the case fatality in the Navy for true pulmonary tuberculosis was 50 per cent. Analysis of the sick records proved beyond any serious doubt that the vast majority were cases of pulmonary undulant fever. It is also more than probable that the strain of *Brucella* involved had acquired the faculty of spreading from man to man by droplet infection without the intermediary of the goat. This attempt of *Brucella melitensis*, a specific parasite of the goat to establish itself as a droplet borne infection of the foreign host species—man—shows how new diseases may arise from the successful attempts of suitable variants of the specific parasites of one host species to adapt themselves to the conditions of life in another host species.

### Parasitic Aberrancy and New Diseases

As I mentioned last year Theobald Smith actually suggested that most epidemics were caused in the above way by aberrant parasites. Burnet (1936) describes another good example of this phenomenon in psittacosis. The virus of this disease may remain completely latent in certain species of Australian parrots causing, to use Burnet's own expression, an "unapparent infection" while in other species of the same order of birds the psittacosis virus will cause illnesses of all degrees of severity. Further, latent bird infections at times cause outbreaks of severe psittacosis in man, though long periods may pass when for some unknown reason, human beings escape attack in spite of the presence of infected birds.

Burnet also believes 'that all epidemiological problems can be most profitably studied along ecological lines,' and he illustrates his theme with many interesting observations on the virus disorders. He divides virus diseases into first, an endemic class such as poliomyelitis in America and yellow fever in Central West Africa, and secondly, into 'new' or freshly imported diseases as the 1933 epidemic of encephalitis in St. Louis and the 1929 outbreak of poliomyelitis in New Guinea.

In endemic areas the virus is ubiquitous and infects the infants and

young children causing in the majority of subjects inapparent or very mild clinical infections, followed by a specific immunity which lasts throughout adult life. In the new, or freshly introduced class of virus diseases, the brunt of the epidemic falls on the adult members of the herd, and the infants and the very young appear to be relatively non-susceptible. This relative immunity of the young was well demonstrated in the St. Louis epidemic of encephalitis, which was undoubtedly a 'new' human disease, whether due to mutation of an 'inapparent' human virus or to an aberrant virus from another host-species, no one can tell. The clinical features and serological characters of the virus distinguished the St. Louis outbreak from European encephalitis lethargica. The same relative immunity of the young was well shown in the New Guinea epidemic of poliomyelitis which was spreading on a virgin soil and human pestilence also attacks adults rather than children.

An interesting example of a disease of unknown aetiology exhibiting, in the same place but at different periods, both Burnet's phases of a virus herd infection is acrodynia, which, according to Pehu (1934), first appeared in Paris as a 'new disease' in 1827. Acrodynia has an unmistakable clinical picture, including among its chief symptoms acute pain and redness of the extremities limited by the ankles and wrists. Its duration is about four months. On its first appearance acrodynia caused a fulminating epidemic of over 40,000 cases. It then attracted no attention for over seventy years. During this interval it is probable that the causative agent was perpetuated in the population as unapparent or unrecognizable infections. Acrodynia reappeared in Paris in 1903 as a rare sporadic endemic. In the first and epidemic phase adults suffered more frequently and more severely than children and the fatality was considerable. In the second and endemic phase acrodynia was a children's disease with an insignificant case mortality. Acrodynia is thus a perfect illustration of "Burnet's law" in spite of the fact that a specific virus has yet to be found for it.

In order to explain the age distribution in his two classes of virus infections, Burnet (1936) says that, "a relative non-susceptibility of infants is a clear adaptation to allow survival in the presence of pathogenic organisms, until specific adult immunity can be developed." Probably he is right, but, in accordance with the principles of natural selection, it is a little difficult to understand either from the human or from the virus point of view, how infants came to be born immune, only to become susceptible later unless they had the good fortune to replace their natural genetic immunity by an acquired specific immunity in early life. The whole subject of infantile non-susceptibility is most complex. There is the passive congenital immunity due to the transference of maternal antibodies *via* the placenta and the milk, in addition to the peculiar but well confirmed insensitiveness or *anergy* (as the opposite of *allergy*) of the infant towards all sorts of substances—inorganic and organic poisons and

mutants as well as specific antigens Therefore Burnet's interesting theory merits a more detailed examination than I can give it here

The recent epoch-making work on the aetiology of influenza illustrates some host-parasite relationships in which parasitic aberrancy or change of host and parasitic variation or mutation may play an important part

Laidlaw (1935) in his Lancre lecture gave a summary of this work and pointed out how an American veterinary inspector, Koen, was so struck by the simultaneous appearance of human and swine influenza in 1918 and the similarity of their pathology that he was sure that both host species were suffering from the same specific infection

Within the last year or two many observations on the clinical and immunological affinities of human and swine influenza virus led Laidlaw to say "It is exceedingly probable that the virus of swine influenza is really the virus of the great pandemic of 1918, adapted to the pig and persisting in that species ever since This inference receives support from Shope (1936) and others who have shown that the serum of most human adults will neutralize the swine virus while the blood of children under the age of 12 years fails to do so, although children's serum will generally neutralize the virus of present-day influenza As previously mentioned, this observation is nowadays generally accepted as evidence that most adults but not children have been infected with swine virus some time in their past

Further circumstantial support for Laidlaw's intriguing hypothesis comes from Wilson Smith and Stuart Harris (1936) who described how the latter caught influenza from a ferret This ferret strain of virus had originally come from a human source but during its residence in a series of ferrets the virus had acquired new pathogenic characters one of which was the ability to cause extensive pulmonary lesions in mice This strain also caused some lung disturbance when transferred to Stuart-Harris and after passage through him was still able to produce influenzal pneumonia in mice—a character never before exhibited by a strain of influenza virus when first isolated from a human being Provided pandemic influenza did not arise as a direct mutation of an existing human virus these observations suggest that influenzal pandemics might originate either by the mutation of the virulence of a specific human virus by animal passage or by the specific influenza virus of another animal straying into man and attempting to establish itself as a human parasite

The favoured theory is that swine influenza virus is an otherwise extinct human virus side tracked in the pig On the other hand the swine influenza virus does little harm to this host, the pig except when the latter is secondarily infected with swine influenza bacilli In this respect swine virus behaves as if it were a well-adapted specific parasite of the pig Again if this was the same virus that devastated the human race in 1918 it then free this virus displayed the character of one of the wildest of Elton Laidlaw Smith's straying parasites, seeking new worlds to conquer. It is

also of [illegible] pandemic virus [illegible] characters [illegible] freshly infected [illegible] adults were [illegible] usually more fatally attacked than children [illegible] therefore that the holocaust of 1918 was caused by an abnormal [illegible] of the hog rather than that swine influenza originated from a [illegible] parasite of *Homo sapiens*

In conclusion While the direct mutation of one kind of [illegible] parasite into another may not often be responsible for epidemic phenomena [illegible] yet mutations must frequently happen among the pathogenic protozoa bacteria or viruses as in all other living organisms The vast majority of such mutations having no survival value die out at once swamped by the normal offspring of the parent strain Only on rare occasions will a mutation chance to arise when the conditions give it survival value over the other variants of the same species But at such moments the new variant could spread and gradually replace temporarily or permanently any other variants of the species which were less closely adapted to the environmental conditions of the moment—and it is becoming more and more evident that new diseases, epidemics and changes in the clinical characters of endemic and epidemic illness are sometimes as much the result of parasitic variation as of changes in host-resistance and environment

There are many other host-parasitic environmental relationships of great ecological interest with which there is no time to deal in this paper as for example, symbiosis, where one parasite may assist its host or another species of parasite living in that host There are the numerous problems concerned with secondary and multiple infections Finally there is the fascinating subject of hyperparasitism or the parasitism of parasites as illustrated by the specific bacteriophages which cause disease and latent infection of the pathogenic bacteria

I hope however that I have said enough to illustrate the need for an ecological outlook on epidemiology

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## RENAL CARBUNCLE

By Surgeon Commander J A Maxwell M B B Ch F R C S (Ed) R N

Apart from urinary sepsis in the urinary tubes themselves, an abscess may form in the kidney box as a result of —

A —Direct extension from suppuration in another organ such as the appendix, pleura, liver or vertebral column

B —Blood borne infection from a staphylococcal focus elsewhere—usually in the skin

C —Infection from a renal carbuncle

The following are examples of the first two causes —

A —An officer was admitted to R N Hospital, Chatham suffering from a tender right loin leukocytosis, fever and anorexia His urine was normal

The maximum tenderness was posterior, a perinephric abscess was diagnosed and drained by lumbar incision

It was found to be due to *B coli* infection originating in a retrocecal appendicitis

B —A Medical Officer had an attack of boils at Hong Kong when convalescent he played rugger received a kick in the loin and developed and had drained a staphylococcal perinephric abscess metastatic from his boils and provoked by trauma

The two cases I wish to describe now belong to a third type (C)

Both, when first seen presented the clinical picture of perinephric abscess from whatever cause—there had been an insidious onset of hectic fever, pain and tenderness in the loin, anorexia, night sweats polymorphonuclear leukocytosis, associated with a practically normal and sterile urine, and no gross disturbance of micturition

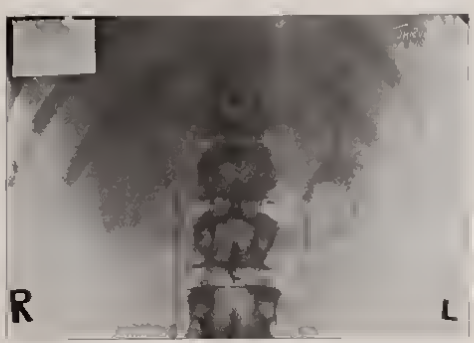
In each case there had been a staphylococcal skin lesion some weeks previously

A uroseleotan *x*-ray was taken in the first case The skiagram showed the spidar leg deformity suggestive of neoplasm and the diagnosis seemed to lie between (1) Neoplasm with infection separ added, (2) perinephrum abscess distorting the renal outline by extrinsic pressure, (3) renal carbuncle

The kidney was exposed by lumbar incision and no perinephric abscess was found The organ was large and soft and there projected from the convex border a large mass, about 3 in in diameter, the nature of which was uncertain

Nephrectomy was performed and the patient made a good and rapid recovery

Microscopical examination at first suggested a hypernephroma or Grawitz tumour, but a final diagnosis of carbuncle was made after consultation with the Naval & Military Consultant




The second case presented a similar clinical picture but in this case no skiagram was taken before operation at which what was supposed to be an ordinary primary perinephric abscess was found with a careful scrutiny of the kidney

Such cases usually do well after simple drainage and a quick recovery was expected

This hope was not fulfilled and after weeks of drainage the condition was still unsatisfactory with persistent fever sweats and purulent discharge

A skiagram then taken revealed great distortion and diminution of the calyces on that side

It was now suspected that we had been dealing with another case of carbuncle to which the perinephric abscess was secondary

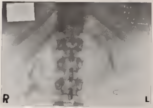
Nephrectomy after weeks of suppuration was likely to be difficult and

[illegible] and [illegible] was replaced [illegible] of [illegible]

[illegible] itself

However no improvement foll[illegible] and nephrectomy became inevitable

The kidney was finally remov[illegible] to the distorted and sclerosed perineph[illegible] site of multiple carbuncles




[illegible]

The practical lesso[illegible] that no perinephr[illegible] without pyelography to exclude intrinsic [illegible]

The condition [illegible] has [illegible] the last few years

The following [illegible] is [illegible] accounts in the *Journal of Urology* [illegible] —

(1) Less than one hundred cases [illegible]

(2) It is more frequent in male[illegible] aged [illegible] the service age period

(3) *Staphylococcus aureus* is the [illegible] agent from a focus usually cutaneous but [illegible] The primary lesion has usually healed before the renal infection [illegible]

[illegible] similar to carbuncles elsewhere and may be simple or multiple

(5) Only one bilateral case has been described an important point when nephrectomy has to be considered

(6) The absence of pus in the urine and of urinary symptoms distinguish it from ordinary renal sepsis

(7) Intravenous rather than retrograde, pyelography is essential to the diagnosis The distortion of the pyelogram is often similar to that found in neoplasm (Note to the spider-leg deformity in Case I)

(8) Renal carbuncle gives rise to some and indeed may be the underlying cause of all so called primary perinephric abscesses It has been suggested that small superficial carbuncles may give rise to perinephric abscesses which clear up with simple drainage and that only when the lesion is deeper and larger does interference with the kidney become necessary for a cure Pyelography will distinguish between the grave and the negligible

(9) As regards treatment the balance of opinion favours nephrectomy either primary as in Case I or secondary after drainage as in Case II A practical point in favour of primary nephrectomy is the fact that it is relatively easy whereas delayed and removal of the kidney after prolonged suppuration is difficult and dangerous in the extreme, and may become imperative in an already exhausted patient

Perinephric abscess is fairly common in the Service The whole subject is of importance to us as this field of surgery has been opened up and brought to our notice and within our reach by development of pyelography

A staphylococcal infection such as this may be an accident in the life of an otherwise perfectly healthy man and if properly handled should not affect his future or involve the loss of his career

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## THE INVESTIGATION OF THE SURGICAL KIDNEY INCLUDING A FEW CASES

BY SURGEON LIEUTENANT-COMMANDER (EMMANUEL DAVIS R.N.

The investigation of a renal case consists of a series of tests and examinations Broadly speaking these are (1) Urine examination (2) function tests (3) x-rays and pyelography, (4) cystoscopy and ureteric catheterization

The clinical side of the picture is ignored as each case must be judged on its individual merits

There are many modifications and improvements on the sensitiveness

of these tests but for the purposes of this article it is proposed to give only the more simple tests and their interpretations, illustrating where possible by examples

URINE.—(*a*) A general examination should be carried out as a routine in order to exclude conditions outside the province of surgery For example, glycosuria, albuminuria

(*b*) Microscopical examination will give evidence of pus, blood epithelial or even tumour cells Pus cells are very often presumed to originate in the lower urinary tract, when they may very well be due to a cystitis or pyelitis. Hæmaturia may be a sign of any lesion of the urinary tract the most frequent causes are stone tumours or tuberculosis, but it should be borne in mind that hæmaturia may be experienced in such diseases as hæmophilia, scurvy, purpura jaundice infective fevers, and after the ingestion of certain drugs It cannot be too strongly emphasized that every case of hæmaturia should be cystoscopically examined at once to ascertain the source of the blood, whether bladder or right or left kidney One may easily miss a malignant kidney if *x* rays happen to show a calculus on the opposite side

(*c*) Cultural examination for bacteria coliform organisms, staphylococci and T B are the most common organisms Here it should be noted that pus in a "sterile urine" is strong presumptive evidence of T B and every case of staphylococcal infection should be *x* rayed as this is the stone-forming organism

FUNCTION TESTS *Urea Concentration Test*.—Here the result is considered satisfactory if the concentration is 2 per cent or over in the urine voided at the end of each hour for the first three hours after the ingestion of the urea, but where one is dealing with a poor kidney more faith should be placed in the organ which shows power of concentration in dealing with the extra work involved in excreting the additional urea for example a reading of 1 1, 1 6, 2 1 per cent is considered better than one of 1 9 2, 2 1 per cent

At the same time, it must be remembered that the test depends on the rate of absorption of urea from the stomach In a slow case the result might read 1 2 1 4 1 6 per cent, and one would be correspondingly depressed but if the test be continued it would read, possibly, at the end of the fourth or fifth hours 1 9 and 2 3 per cent which could be considered very satisfactory

*Urea Clearance Test*.—This is probably the most sensitive test for renal function at present available Roughly it depends on the volume of blood cleared of urea per unit of time The normal of 100 per cent has been arbitrarily made by the average of the results of a large number of tests on normal people

Incidentally it gives the blood urea

In interpreting the result 70 per cent and over is considered normal Uræmia is always present if the figure is below 5 per cent, but it never





[illegible] intently [illegible] [illegible]

*Chromo cystoscopy* [illegible] [illegible] a 1 per cent solution of indigo carmine are injected intravenously the estimation of function is made by timing the appearance of the dye at each ureteric orifice as seen cystoscopically

Three minutes is considered normal with eight minutes as a maximum any longer time in excretion is considered pathological In a good functioning kidney the pale blue colour changes rapidly (within one minute) to a deep blue

In a poor functioning kidney the urine remains pale blue for a long period

PHTHALEIN TEST —1 c c of a 0 6 per cent solution is injected intravenously and separate specimens of urine are collected by ureteric catheter and the percentage eliminated is estimated

This test has no advantage over the indigo carmine test and is more liable to error (leakage past the catheters)

*Pyelography* is essential in renal investigation With the intravenous injection of perabrodil or urosclectan B which are opaque to x rays a pyelogram may be obtained

The density and outline of the shadow depend on the amount and concentration of the substance in the urine and thus, on the function of the kidney

As a result of this examination one should be able to form an opinion on (*a*) The presence and position of a calculus, if any (remembering that pure urate cystin and xanthin stones give a poor shadow and may be missed) (*b*) whether a pyelonephrosis exists (*c*) some pathological conditions of the ureter and (*d*) any filling defect or pressure distortion of the pelvis

In a number of cases the pelvis is only partially or irregularly filled, or the ureter has not been outlined and it becomes necessary to carry out retrograde pyelography (figs 1 and 2)

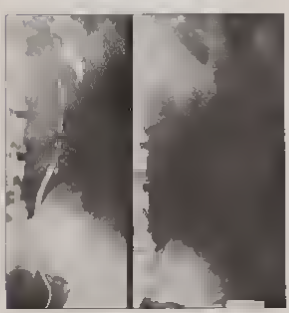
Ureteric catheters are passed in the usual manner (this very seldom requires an anæsthetic) and 15 per cent solution sodium iodide is injected slowly until the patient complains of discomfort or until 30 c c have been injected, whichever happens first One usually has a shrewd idea of what the pelvis will take from the size of the intravenous pyelogram

The usual amount is between 7 and 10 c c If one puts in too much, the pelvis is distorted and a condition of pseudo hydronephrosis is apparent It is emphasized that it is absolutely essential for the urologist who alone knows the clinical side of the case to read his own pyelograms in conjunction with the radiologist Retrograde pyelograms show a much more exact outline than the intravenous and an opaque catheter shows exactly the course of the ureter in relation to calculi or kinks (figs 3 and 4)



A

[illegible]



A [illegible]

[illegible]

Instrumental examination consists in cystoscopy with bladder examination and/or ureteric catheterization in order to obtain sterile specimens of urine from each kidney. The passing of ureteric catheters is considered legitimate treatment of ureteric calculus, with the idea of entangling the stone by three twisted catheters or if this fails, by inducing ureteric colic which will assist the passage of the stone. The writer has tried this method in two cases but was forced to revert to major surgery in the end



Fig. 5.—Showing [illegible] through advisable to [illegible]

*Case 1.*—Leonard [illegible] was admitted on September 1, 1935 suffering from chronic [illegible] urgency and frequency of micturition which was ascribed to a subacute [illegible]. Five weeks after admission cystoscopy was carried out the bladder was found [illegible] and the mucosa chronically inflamed. Appropriate treatment for [illegible] was instituted. Up to this time prostatic smears had revealed gonococci. On October 21 cystoscopy was again performed the bladder was still very intolerant and inflamed patches of debris adhered to the walls and the cell [illegible] from the right ureteric orifice appeared to be bloodstained. On the following day [illegible] pyelography was carried out but the right renal area was obscured by [illegible]. However a half moon-shaped area of spotted opacities was seen. On October 24 retrograde pyelography showed a filling defect in the upper part of the right pelvis and T.B. were found in the catheterized specimens, numerous on the right and scanty on the left (fig. 6).

The conclusion drawn was that the right kidney was partially caseous and had given rise to a secondary T.B. cystitis resulting in a mild ascending infection on the left. Hoping to rid the patient of his intolerable frequency and miserable existence it was decided to remove the right kidney this was done without difficulty, except for adhesions on October 4. The organ was covered with tubercles and a caseous cavity about the size of a gooseberry was found in the upper pole. The urine was examined daily for T.B. and on the ninth tenth, next

[illegible] days after operation they were reported as scanty but [illegible] were not found again and the patient steadily improved physically [illegible]. On invaliding from the Service on January 22 1936 he could last [illegible] without micturition or discomfort

The interesting part of this case lies in the fact that the tuberculous [illegible] was obscured by the subacute prostatitis



[illegible]

*Case* 2 —Marine, A W C [illegible], was admitted on September [illegible] complaining of haematuria and pain in the left side of the back X-rays showed a small stone in the lower calyx of the left kidney and a vague shadow in the substance of the right kidney Specimens of urine obtained from each organ by ureteric catheterization were sterile The left calculus was removed but on the right side, owing to the small size, absence of symptoms and difficulties of removal of the stone, it was left

Recovery was uneventful the interesting fact in this case is the aetiology of the stones This man had no urinary infection but he had been in bed in hospital with a fractured leg for a period of seventeen months, 1933 to 1935 It has been suggested that these stones form as a result of osteoporosis and mobilization of the calcium and stasis in the pelvis unassisted by change of position

*Case* 3 —A B— H M, aged 27, was admitted on July 23 1936, after a typical attack of renal colic X rays with pyelography showed a small calculus in the line of the left ureter opposite the lower border of the fourth lumbar vertebra The pelvis and ureter above the stone were dilated Ureterolithotomy was carried out on July 30 As soon as the patient was anaesthetized he was cystoscoped and a ureteric catheter was passed as far as the calculus and the cystoscope removed The usual lumbar approach was employed, the hand was passed down into the wound behind the peritoneum and moved from side to side and the catheter palpated This was followed up to the stone which, when removed was found to be about the size of a pea Having the catheter in the ureter rendered the location of the stone easy, and as far as the writer is concerned,

[illegible] cathete[illegible] thirty [illegible] appears to [illegible] only [illegible]

[illegible] Caucasian female [illegible] history of [illegible] the left [illegible] on exploration by [illegible] on [illegible] 1935. On [illegible] was again opened [illegible] left [illegible] large [illegible] on the posterior [illegible] The [illegible] and [illegible] removed. He was admitted on [illegible] 1936, to R.N. Hospital [illegible] four days later the patient had [illegible] attacks [illegible] A [illegible] showed poor excretion [illegible] both kidneys [illegible] all calculi [illegible] of the right kidney. [illegible] clearance test showed only 17 per cent of [illegible] function on the blood urea [illegible] mg. per 100 c.c. of blood.

The patient was discharged to sick [illegible] and returned for [illegible] two months.



[illegible]

[illegible] admitted on April 9, 1[illegible] rays showed the other [illegible] (fig. 7).

Urea clearance was 100 per cent [illegible] and [illegible] of [illegible] and [illegible] carmine appeared on the [illegible] right side in five minutes [illegible] greatly improved. As one stone [illegible] was decided to await [illegible] the patient had entered [illegible] was decided to try [illegible] the right ureter could [illegible] catheters were passed [illegible]

colic requiring morphia on a number occasions without success, although [illegible] to a position 6 cm from the lower end of the ureter (as measured [illegible] finally the stone was removed extraperitoneally by a right iliac approach. After the operation a sinus persisted for some time but it has now healed and the patient has been discharged to duty

*Case 5.*—Stoker W F J H, aged 30, was admitted early on the morning of May 20 1936 from "Sick on Shore." He complained of severe pain all over the right side of the body. The urine showed pus cells and blood cells and epithelial cells, and a coliform organism was grown on culture. A diagnosis of pyelitis was made and the patient was treated with sodium mandelate. During the course of treatment colonies of staphylococci were noticed in the routine daily culture, at first ascribed to contamination, later when it became obvious that a staphylococcal infection existed it was decided to carry out for calculus. Urosulfan was



A B

[illegible]

[illegible] opaque shadow in the lower part [illegible] right kidney region opposite the body of the 3rd lumbar vertebra and [illegible] in the right side presenting the [illegible] lowest shadows seen in the urinary tract. Immediately below this and [illegible] the calculus opposite the 3rd lumbar vertebra [illegible] up the right ureter until the patient [illegible] relatively that the ureteral [illegible] patient had two stones only one [illegible]

The patient was operated [illegible] 1936, the [illegible] stone was found and removed [illegible] the renal stone was delivered through an incision in the [illegible] pole of the kidney

The patient made an uncomplicated recovery

[illegible]

*Case 6.*—[illegible] R. N. B., aged 11, was admitted on March 18, 1936, complaining of [illegible] severe pain in the left side. There was slight tenderness on deep palpation of the left kidney.

The urine contained pus, red blood and epithelial cells, but the urine was sterile on culture. Urea clearance test was 54 per cent. of normal function and blood urea was 66 mg. per 100 c.c. of blood.

X rays with uroselectan showed a large calculus in the left pelvis.

Pyelolithotomy was performed on March 19, and a large stone removed and the edges of the incision in the pelvis approximated by three catgut sutures. The wound was closed in the ordinary way with a large drain down to the pelvis; this was removed on the seventh day and the sinus had ceased to discharge by the fifteenth day.

This case demonstrates the rapidity of healing where the pelvis could be properly repaired and no urinary infection existed.

Five months after operation urea clearance test was 100 per cent. and blood urea 27 mg. per 100 c.c. of blood.

Indigo carmine appeared on the right side in three minutes, and on the left side in six minutes.

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## RAY TREATMENT OF SKIN DISEASES

By Surgeon Commander C. N. Ratcliffe, R.N.

### Ray Therapy

It is possible that a few notes on the types of skin disease that benefit by the various forms of ray therapy obtainable in Naval Hospitals will be of interest.

The days have passed when patients were covered from head to foot with evil-smelling unguents for *x* ray and ultra-violet therapy are coming more and more into use in the treatment of chronic skin diseases. It may be as well to start with a summary of the different rays that are used.

The gamma rays of radium and deep *x* rays are not available in a Naval Hospital and so need not be considered. The softer *x* rays however are most valuable and in my opinion are not used nearly enough in Naval Hospitals. Many doctors are frightened of the possibility of causing a burn and others are still sceptical of the results obtained; but, prescribed with discretion and given with care, there should be no risk and in certain cases the results of the treatment are startling in the quick improvement obtained.

The infra-red rays, though very useful in the treatment of neuritis, lumbago, &c., are less useful in skin disease; but they can be used in cases where vasodilatation is required, such as in cases of chilblain.

Far more important from the dermatologist's point of view are the ultra-violet rays, and especially the Kromayer lamp, by means of which concentrated ultra-violet rays can be given to small areas of skin and hitherto inaccessible spots such as the nasopharynx, external meati.

*Types of Cases Suitable for X-ray Therapy.*—I do not consider it

advisable [illegible] with *x* rays, though [illegible] are reputed [illegible] and healing [illegible] particular where there is not [illegible] results [illegible] than those obtained by treatment [illegible] drugs I [illegible] following diseases as particularly suitable [illegible] therapy —

(1) *Chrysarobin Rash* — The small, white, blistery sago granules along the sides of the fingers and toes disappear and the secondary eczematous condition that so often accompanies them heals The burning and irritation are relieved from the first dose

(2) *Irritable Dermatitis* —All Naval Medical Officers who have been in charge of the Skin Department of a Naval Hospital, will have worried over these cases so hard to classify and even harder to cure Lesions are usually localized, inflamed and complicated by scratching, and are aggravated by hot weather and by the serge clothing worn Although these cases tend to recur in my opinion they respond quicker to *x* ray therapy than any other form of treatment

(3) *Sycosis Barbæ* —This can be treated in two ways Either an epilating dose can be given, or repeated fractional doses The first method is not free from risk—areas may overlap and a burn be caused Also, after a full epilating dose, six weeks must elapse before any further treatment is given Fractional doses certainly cause marked if less dramatic improvement than the epilating doses but as I have had cases that relapsed I now combine *x* ray treatment with an autogenous vaccine It is not advisable to use strong disinfectants at the same time as *x* ray therapy Of the seven cases of sycosis barbæ that are considered definitely cured in the series quoted later two were treated by an epilation dose and the remainder by fractional doses The three cases that were only improved or that showed no improvement were treated with fractional doses

(4) *Subacute and Chronic Eczema* —These cases respond well to treatment as long as localized areas only are affected Cases of wider-spread eczema are not suitable

I consider that cases of psoriasis and also of chronic acne might give good results as long as the lesions were not too widespread but in this hospital these cases have been treated with ultra violet rays and so I cannot give any definite opinion on the value of *x* ray therapy It should certainly be worth trying

Since September, 1935, the following cases have completed courses of *x*-ray treatment in R N Hospital, Chatham

| Disease | Total | Cured | Improved | No improvement | Relapsed |
|---|---|---|---|---|---|
| Chronic dermatitis | 10 | 6 | 4 | — | — |
| Eczema | 5 | 3 | 2 | — | — |
| Chronic pemphigus | 1 | 1 | 1 | | |
| Chronic ulcer | 1 | | | 1 | |
| Sycosis barbæ | 10 | 7 | 3 | 1 | |

*Technique*—Voltage 70 (rms) (100 kv peak)
Current 3 milliamperes
Filter 1 mm aluminium
Distance Focal skin distance 22 cm
Protection Lead rubber sheeting over patient Marking of areas treated, with blue pencil, to avoid overlapping Lead glass cones (applicators) used
Dosage Checked by Sabouraud Pastille with Lovibond's Tintometer One quarter or one third P D is usually prescribed according to the case A metalix 10 kw or 5 kw water cooled tube is used Although probably quicker results would be obtained in certain cases if no filter was used, it is considered safer to use a 1 mm aluminium filter in all cases

THE USE OF ULTRA VIOLET RAYS INCLUDING THE KROMAYER LAMP

It is very necessary to say that most cases of acute and subacute skin disease are *not* suitable for this treatment as ultra violet rays even in small doses tend to irritate the skin and aggravate the lesion

Chronic dermatitis on the other hand often responds well to ultra violet radiation but the cases require on the whole a longer course of treatment than when x-rays are employed

Acute impetigo contagiosa responds well to treatment by the Kromayer lamp, especially when treated in its early stages The weeping lesions have their scabs removed the raw area is given a bactericidal dose of rays and the area covered with a patch of elastoplast When the latter is removed the skin below is usually healed

Certain chronic skin diseases, including pustular acne, alopecia and psoriasis require large doses An ordinary erythema dose is quite insufficient for these cases

It is advisable, however to give one or two preliminary moderate doses before the big doses are administered as certain types of patient viz (*a*) the type that does not sunburn in the summer and (*b*) the type with a very delicate skin may not tolerate huge doses

Good results can usually be obtained by increasing the dose until twice the erythema dose is given every fourth day

A few notes on some uses of the Kromayer lamp may be of interest Experiments with growths of staphylococci and streptococci in Petri dishes showed that a one-minute exposure at contact distance was sufficient to kill all colonies directly exposed to the rays whilst all round this area the colonies multiplied normally

It was therefore thought worth while to treat exposed germs in diseases such as impetigo &c with the lamp

Also by means of a tonsil applicator the tonsils can be treated Several

...ases of tonsillitis t... ...n clear up with medical treatment were given Kromayer lamp t... ...with benefit

Four cases of [illegible] diphtheria carriers were next given three exposures each to the mercury vapour

These cases were negative after treatment and as far as I know have not relapsed since

A case of Vincent's angina of the throat and gums also quickly became negative

By means of the nasal and post-nasal applicators hay fever can be treated and the mucous membrane desensitized So far only three cases have been treated so it is obviously quite impossible to make any definite claims, but these three cases were all very interesting.

The first was a Sick Berth Petty Officer who has had acute hay fever yearly for many years

The second was a Naval Medical Officer who likewise has it every year, and suffers great inconvenience both at his work and games

These two cases were desensitized with the Kromayer lamp during the middle of April This year I accept the slight sensitizing of the eyes they have suffered no inconvenience and no attacks

The third case was a Marine Officer who was in the throes of an acute attack He obtained relief from his first treatment and the hay fever disappeared after his third

Another interesting case was a very severe blastomycosis contracted in the tropics The left foot and ankle were purple in colour and there were twenty three deep ulcers present The case was so severe that it was doubtful at first if the foot could be saved

LIST OF SKIN CASES TREATED IN THE MASSAGE DEPARTMENT [illegible] IN THE ULTRA VIOLET RAYS FROM SEPTEMBER 1915 TO JUNE 1916

| Name | No. of Attendances | Attendances Required | Result | Remarks | No. of Relapses |
|---|---|---|---|---|---|
| Impetigo | 13 | 1 | 5 | | 1 |
| Ringworm | 11 | 10 | 11 | | |
| Herpes | 3 | 5 | 1 | 1 | 1 |
| Sycosis barba | 5 | 15 | 1 | | |
| Psoriasis | 1 | 15 | 1 | 1 | |
| Acne | 2 | 13 | | | |
| Septic wounds (including Burns) | | 19 | 1 | | |
| Varicose ulcers | 1 | 30 | | 1 | |
| Alopecia | | 12 | 1 | 1 | 1 |
| Trichiasis | 1 | | 1 | | |
| Blastomycosis | 1 | 45 | 1 | | |
| Lupus vulgaris | | 11 | 2 | | |
| Mycosis | 1 | 1 | | 1 | |
| Granuloma | | 30 | | | |
| Varicella | 1 | | 1 | | |
| Epithelioma | 1 | 5 | 1 | | |
| Tinea | | 1 | 1 | 1 | |
| Furunculosis | 1 | 1 | 1 | | — |
| Lupus erythematosus | 1 | 9 | | 1 | |
| Hay fever | | 10 | 3 | No applications made this year | |
| Diphtheria carrier | 1 | 3 | 1 | Cured [illegible] treated | |

He had already had different treatments for eight months without any improvement. Tests for fungus were positive.

After four weeks' treatment with the Kromayer lamp using the blue filter in order to get greater penetration of the rays, he was discharged to sick leave cured. The average number of applications to each ulcer was ten.

A very chronic and resistant case of lupus erythematosus has improved greatly under the Kromayer lamp using the blue filter and heavy doses. All lesions on the face are cured excepting for one small patch inside the ear.

It will be seen that this list of cases is small and incomplete, but I consider that some of the results are promising enough to make a medical officer consider the use of rays either i rays or ultra violet, in cases of chronic skin disease.

## Clinical Notes

### A FATAL CASE OF DYSENTERY WITH INTESTINAL HAEMORRHAGE

BY SURGEON COMMANDER W. H. BLETCHLY DARWIN R.N.V.R.
*Medical Officer of Health Cottesmore Rural District*

SURGEON LIEUTENANT COMMANDER W. L. HOLGATE CHAPMAN R.N.V.R.
AND
T. E. CHAMBERLAIN M.B. C.S. L.R.C.P.
*both late East Surrey Hospital, Redhill*

A MAN, aged 33 and of good physique who had never been out of England was first seen by W. T. R. C. on September 15 1936 on account of diarrhœa. He had suffered from looseness of the bowels for ten days previously, but had not ceased work. His temperature was normal, the bowels were open fifteen to twenty times a day. He was sent to bed and placed on bismuth carbonate and kaolin with fluid diet. Blood and mucous were present in foul smelling stools. He had no pain but slight abdominal discomfort. The patient was kept in bed on fluids—linseed barley water soda and milk cornflower Bengers. The motion appeared considerably more comfortable the motions being reduced to five a day. On September 23 his temperature rose to 100.6° F. and he complained of pain at stool and experienced some abdominal pain. On September 24 the patient complained of pain over the descending colon and the abdomen was tender. On September 26 he was seen in consultation by W. H. B. The abdomen was slightly distended. The tongue was coated but moist. He did not present any clinical signs and did not appear gravely ill. He was admitted on September 27 to the local hospital for infectious diseases. The diagnosis of bacillary dysentery. His condition was unchanged except that his temperature had risen to 101.4° F.

On the morning of September 28 he had a severe hæmatemesis and also passed a large quantity of blood by the bowel. His pulse was running, he had obviously lost much blood. He was given hæmophasin 2 c.c. every three hours, morphia ¼ gr. hypodermically, and ice by the mouth. At 1 p.m. purpuric spots were observed on the lower extremities which rapidly spread during the after

[illegible] by [illegible] with blood
his guts [illegible] Mr G C W [illegible] was dead [illegible] immediately typed [illegible] transfusion [illegible] The patient died at 7 p m

*Pathological Investigations*.—Materials for pathological [illegible] were taken on September 28 No agglutination of [illegible] *B typhosus B paratyphosus A* or *B abortus Bang* [illegible] W N Y o Z h [illegible] Shigella Sonne His blood culture [illegible] Only lactose fermenting [illegible] ground limit the [illegible] Dr L P C [illegible] Dr W M Smith of the Ministry of Health Laboratory who also kindly carried out the examination for us

A post mortem examination was done on the following [illegible] The essential features of the post mortem were —

Liver Slight fatty change in the sub-stance of the organ

Spleen Rather soft [illegible]

Stomach and Intestines The stomach contained [illegible] The small was haemorrhagic in places and the small [illegible] the lesser curvature [illegible] The mucous membrane of the small intestine was hyperaemic and [illegible] the large intestine was haemorrhagic and ulcerated Its walls were [illegible] Both the large and small intestine contained altered blood Swabs taken from the ulcers of the colon Only lactose fermenting [illegible] *B Flexneri alkaligenes* were observed The cause of death was [illegible] (*a*) intestinal haemorrhage toxaemia (*b*) bacillary dysentery

This case was one of a number (about twenty) which occurred in the practice of W T R C at this time The other cases were those of mild [illegible] which recovered in two to seven days under treatment similar to the above These in their turn were apparently a portion of a larger outbreak [illegible] of which did not trouble to seek medical advice Dr J L Cumming Assistant County Medical Officer for Surrey, has made a full investigation of the [illegible] of dysentery towards the end of 1936 and in early 1937 [illegible] the County of Surrey (Annual Report of the County Medical Officer of Health for the Year 1936) From his interesting and [illegible] certainly appear that mild unrecognized dysentery may be more common than is generally supposed W F R C was impressed by the resemblance of [illegible] which came under his observation to cases of [illegible] It is as a rule difficult to investigate [illegible] epidemiologically such mild cases in a civil population since on account of their mildness they do not [illegible] observation or if they do their symptoms are [illegible] to arrest attention Such outbreaks however [illegible] or in ships in home waters would appear to present a field [illegible]

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## TWO CASES OF INTESTINAL OBSTRUCTION

By SURGEON Captain H M WHITTAKER

I propose to describe two rather interesting cases of intestinal [illegible] and the method of dealing with them Some of you may have seen the first case of the cases in the Journal of the Royal Naval Medical Service of July 1936, but I propose to amplify those notes somewhat and to look at the case from a slightly different angle The method of dealing with the obstruction, too, has some added interest when compared with the method used in the second case

This first case concerns a Flying Officer R.A.F., aged 39, who was admitted to R.N. Hospital Chatham in October 1934, with typical symptoms of dysentery. He had recently served in Iraq and the *Entamœba histolytica* was demonstrated in the stools. He was treated by a course of emetine and made a satisfactory improvement, and returned to duty in due course. He reported that all was well for about a month, and then the symptoms gradually returned, and finally, he had continued loose motions with obvious blood in the stools.

He was re-admitted to the Hospital in April 1935. I was called upon to see a surgical opinion on account of localized pain and some swelling in the right iliac fossa. This swelling was quite palpable and in view of his previous history it was thought to be a localized abscess, possibly of dysenteric origin, and laparotomy was advised. This was performed on April 24, and the abdomen opened by a right lower paramedial incision. A strange state of affairs was found inside and I propose to reproduce the operation notes I made at the time:—

"Right paramedial incision below umbilicus. On opening abdomen a tumour was found in communication with the ileum. This was delivered into the wound with ease and found to be a massive intussusception about 1 ft. before the ileo-cæcal valve. The gut was collapsed above the obstruction and hypertrophied and inflamed below. No amount of traction would shift the intussusception and there were signs of acute ulceration just below the stoma. The entire mass was resected about 1 in. from the ileo-cæcal valve. Both ends of intestine closed and a lateral anastomosis then performed between ileum and ascending colon. Patient stood the anæsthetic well. Abdomen closed in four layers. Michel's clips used for skin."

Examination of the mass reveals a large tumour at the head of about 3 in. of intussusception. Sanious bang taken. The texture of the growth was even more surprising, thinned in condition found on opening the abdomen.

*Pathological Notes.*—About 7 in. of hypertrophied and dilated (4½ in. in diameter) small gut enclosing 1½ in. of intussusception attached to the apex of which was a tumour 1 in. long and 2 in. through. In the regions not exposed to pressure mucous membrane could be seen covering the tumour which was mostly submucous. It had however invaded the muscle coat and through the partition to between the two enteric layers of gut. The Consultant Pathologist to H.M. Navy, Dr. Woods, considers it to be a leiomyosarcoma and at any rate locally malignant, though removal seems likely to have been complete. He has only seen two such tumours before, so cannot give an accurate prognosis.

Convalescence was retarded somewhat by a mild muscle phlebitis but this rapidly cleared up, but I eventually made so excellent recovery and was discharged to duty.

Naturally our interests were how the new and artificial condition of the intestinal tract was working and a barium meal examination was carried out.

*X-ray Report following Bar. in. Meal.*—Meal had reached rectum in three hours and 10 mins. Small intestine was then almost completely empty but meal could be seen passing through anastomosis into upper end of caecum. Some material had thrown back through ileo-cæcal valve into small intestine but there was no evidence of persistent retained meal was expelled into caecum one hour later. (Traces of barium after seventy-five hours.)

The subsequent history of the case is most interesting. I have seen the officer concerned on three occasions since. He wished to take out an insurance policy on his life and the company concerned, given the full facts of the case, took him on at an increased premium, but stated that if all was well at the end of a year they would revert to normal premiums (which I understand, they have done). He had been passed fit for foreign service and has now either just returned or is just going back to Iraq a fit and healthy man.

[illegible]

[illegible]

[illegible]

continue [illegible] happens in the oesophagus it [illegible] should [illegible] large intestine but here one [illegible] number of cases which appear [illegible] to be typical [illegible] table carcinoma of the intestine [illegible] results chronic [illegible] cases After all unless an actual section is obtained the clinical [illegible] apparent scirrhus growth is not a proof positive test that [illegible] although the chances are that it is so In this case, if you [illegible] resected certain areas in the small intestine which were [illegible] of neoplasm, which turned out to be innocent no section [illegible] I hope that this growth is inflammatory after all If this is so, [illegible] indeed The stoma into the transverse colon is relieving, if not [illegible] the irritation of the inflamed area which may disappear altogether in which case he will have a free passage either way

Suppose now that our surgical diagnosis is correct and that sooner or later the hepatic flexure will be occluded by growth, one of three possibilities presents itself —

(1) A remote secondary in the liver or elsewhere may solve the problem for us by removing the patient before obstruction occurs

(2) Nature who does strange things at times may step in and solve it for us by either atrophying the caecum and the portion of the intestine proximal to the stoma or instituting a reverse peristalsis

(3) We may be confronted with a literal cesspool of stagnation in the caecum and ascending colon the contents of which cannot pass the growth or get into the transverse colon because it cannot overcome the natural direction of peristalsis If this does occur resection of the useless portion appears to be the only remedy but with the adhesions originally found I have grave doubts if this is feasible Luckily the patient lives locally and can be kept under observation and periodic barium meals will give us some indication of what is happening

In my own opinion if carcinoma is the correct diagnosis eventual caecostomy will be the solution of the problem If this is resorted to the major portion of the intestinal contents will continue to pass through the stoma and the function of the caecostomy will be to wash out the stagnant area already defined

He will then be in the position of most other inoperable cases of carcinoma of the large intestine but will have had a period of absolutely normal life after the diagnosis had been made and a caecostomy which will be much more easy to manage than one through which the entire contents of the bowel passes

## AN EXTEMPORIZED NITROUS OXIDE APPARATUS

BY SURGEON LIEUTENANT I H LAMB R N

Cases sometimes occur in war as for example deep seated abscesses which [illegible] surgical intervention yet do not justify full ether anæsthesia Novocain cocaine injected in the presence of acute inflammation and freezing with ethyl chloride does not give sufficient relief from pain

It occurred to me to try cylinder of nitrous oxide gas to the existing Novox inhaler but the apparatus of the lung governed type and I have obtained perfect control and satisfactory short operations by this means

The air tight mitt in the face piece is satisfactory but rather difficult to manipulate and if the apparatus was used as a routine for this purpose it would probably be better to fit a rotating sleeve air valve in the connecting tubing

In my opinion nitrous oxide is preferable as a minor general anæsthetic to cyprane which while it is not dangerous and has the drawback that once rejected it cannot be satisfactorily counteracted should the patient prove unduly susceptible to the calculated dose

# Reviews

Sketches from my Sketch Book. By The Idle Sketcher. Made Very Bad Etchings and Worse Poems. Pp. 128. Photographic Reproductions of the Illustrations. London: Lille Dale, Sons and Company, Limited, 91 Petticoat Street, W.1. 17s. 6d.

This is the second book written by The Idle Sketcher. The first was a delightful production and although it cannot be said that the present volume is written in the same delightful manner, it is nevertheless full of Rollingflour.

The majority of his sketches are full of South African interest and will be highly treasured mementoes to people who have been there. They will also help the interest and keenness of those who have not been there to be appointed there.

His style is perhaps unsuitable for such a book, but there is no doubt that these verses will help the sense of humour combined with his powers of observation.

The Idle Sketcher has stepped straight into the realms of literature and we look forward with keenness to his further publications.

No one will regret having Sketches from the Sketch Book.

Treatment in General Practice. The Medical Treatment of Skin Diseases. Vol. II. Articles published in the *British Medical Journal* from September 1935 to September 1936. Pp. 128. Illustrations. London: The British Medical Association. 1936. 3s. 6d.

This interesting and useful book contains a number of articles by acknowledged authorities on the subject of skin diseases published in the *British Medical Journal* from September 1935 to September 1936. Volume I of the series which was reviewed in the *Journal* of December 1935 dealt with infections and infestations of the skin. The present collection of papers embraces the subjects of neurological factors in skin disease, the hormone system in skin diseases, diseases of the blood and blood-forming organs, skin lesions due to disorders of metabolism, vasomotor disturbances, and the treatment of skin diseases. The late hours of the medical officer at the Naval Training Establishment must be pleasant volume of 428 pages one and a half times as long as the present one than in thousands of pages of the small type of the *Journal* of a few years ago when the reviewer was much more inclined to read than to write. To relegate the actual treatment of diseases to the last section of the book is by his own initiative and experience to place the practical knowledge of therapeutics.

The subject matter of this book is not entirely confined to the Management of Skin Diseases solely to the Management of Skin Diseases but includes articles on the treatment of surgery and two articles on the interpretation of radiographs of the skin. The latter is particularly welcome.

Every branch of medical science has its own jargon which is unintelligible except to the initiated. But in the case of the present article the mystic terms mentioned fill the reader with bewilderment and bewilderment—theoretically at any rate. The introduction to the excellent book is an example of the manner in which the author presents the fruit of his knowledge at the expense of those who do not know something about everything. The editor of the book, Dr. G. Greenfield Sim, deals with the subject matter of the book in a

puncture [illegible] of the subject would appear to be of more value to the young clinical [illegible] than to those in general practice for whom the volume is primarily [illegible]

In the section [illegible] articles devoted to diseases of the nervous system those by Dr W [illegible] Burton on subacute combined degeneration and disseminated sclerosis, and Dr [illegible] Riddoch on meningitis are particularly valuable

The section [illegible] mouth diseases of the digestive system includes an authoritative article by Sir James Walton on the surgical treatment of peptic ulcers He [illegible] the general principles which are now being generally accepted and [illegible] the fact that the views of physicians and surgeons are becoming more [illegible] approximated because of the knowledge due to recent research

In the part of the volume concerned with the diseases of the blood, Dr Witts [illegible] a most interesting account of agranulocytosis correlating the rise and fall of its incidence in various countries with the introduction and abandonment of amidopyrine He emphasizes the great danger of using this drug more or less promiscuously for minor complaints when one of the harmless analgesics or dentifrices would be adequate and he considers that its administration should be [illegible] for cases of severe pain which have proved resistant to other remedies For the local treatment of the mouth and throat lesions in agranulocytic angina [illegible] one of Marriott (1934) is recommended although the author utters a [illegible] on the undesirability of wearing out the patient by "constant therapeutic [illegible] The same author, in collaboration with Dr W M Levitt, writes on [illegible] subject of the leukæmias The question of x ray therapy is fully discussed and [illegible] technique employed in cases of chronic leukæmia is described While [illegible] these diseases are quite incurable there is no doubt that after a course [illegible] properly given a dramatic temporary alleviation of symptoms may be [illegible] and as the authors say, although life may not be prolonged the *quality* of life remaining to the patient is vastly improved

The section on the chronic rheumatic diseases is no more disappointing than [illegible] expected in the absence of any real knowledge of their ætiology The [illegible] Dr Matthew Ray *D S O* on the physical methods of treatment in chronic rheumatism is however very useful The ways of preparing mud packs [illegible] with paraffin wax applications and other forms of local treatment are [illegible] and the different varieties of electrical treatment and the indications [illegible] uses are given Other papers in this section are concerned with [illegible] histopathology rheumatoid arthritis and fibrositis The unsatisfactory [illegible] advice to the human element in the treatment of chronic rheumatism is rather serious [illegible] of the masterly essay on this subject contributed by Dr W C Copeman to the Report on Chronic Rheumatic Diseases to the annual report of the Empire Committee on Chronic Rheumatic Diseases, 1935

Of the four articles on diseases of metabolism three are devoted to dietetics including the treatment of diabetes coma and other complications of this disease The fourth paper in this series is written by Dr Doerthwaite, to his characteristic style on the subject of obesity In these days of slimming the information which he presents so clearly and in so practical a manner must be of the greatest value to those engaged in private practice

The final part of the volume deals with diseases of the kidneys, including acute and chronic nephritis nephrosis cystitis and pyelitis A brief description of the [illegible] treatment is given in the last article

Altogether this volume constitutes a very valuable addition to the library of [illegible] practising physician Although it may be considered presumptuous for us [illegible] of the Royal Navy to attempt to estimate its value to his civilian brethren [illegible] would advise any officer who contemplates entering general practice after retirement to expend the first few shillings of his hard earned pension in the purchase of this eminently practical volume

A word must be said in praise of the general format of [illegible] type. It weighs under two pounds and is very comfortable to hold.

**Brompton Hospital Reports.** A Collection of Papers Reprinted [illegible] from the Hospital. Published by the Research Department of the Hospital, and printed by Gale and Polden Ltd., Aldershot. Vol. XV. 1946. 143 pages, 14 plates. Price 6s. post free.

In the familiar words of the book publisher's circular, "This [illegible] should be on every doctor's desk." It should be read by every [illegible] own good and that of his patients. There is much in it to [illegible] the surgeon think, most especially when he happens to be [illegible] surgery.

This small volume covers in its 143 pages a number of subjects written in such a way that they are of interest to anyone and impart a great amount of information in a small space. It is not limited to tuberculosis, by any means, but covers many aspects of thoracic medicine and surgery. It is compiled from the lectures and publications of members of the Brompton Hospital Staff, and this is the first volume for the year 1946.

There are roughly two divisions: the first dealing with tuberculosis and its infectivity and after care, and the very important question of relapse. The second division is more general and covers the position of surgery to-day in the treatment of various diseases of the chest. Phrenicectomy is dealt with in two articles, and details of massive collapse of the lung and the modern method of bronchography are included. The whole is terminated by the Hospital Medical Report for 1939, and two appendices on the results of treatment in cases of carcinoma of the lungs.

The history of the Lambeth Degree is a brief outline of this little known mode of entry into the medical profession in times past. It deals with the [illegible] degrees granted since 1660 by the Archbishops of Canterbury. The first one was conferred upon the then Mayor of Swansea in 1889.

The infectivity of tuberculosis is a subject which is causing [illegible] discussion to-day. Is a childhood reflection a key protection against [illegible] infection in later life? In a short article L. S. T. Burrell throws a little light on the subject and stresses the great danger of the sputum positive case as a source of infection despite the best hygiene and prophylactic measures. His references to the protection offered by B.C.G. are disappointing, as the protection against tuberculosis by infection or inoculation is protection so slight that its very existence is open to question. But we feel we have not all the final answer and before we condemn it altogether it should be investigated much more fully. But see his statement as an acknowledged authority in phthisis rather shakes one's faith, especially when we think of the failure of tuberculin to live up to its early promise.

Wingfield and McPherson describe an investigation carried out among adolescents and young adults at school and at work. They here all presumably healthy, yet 0·65 per cent. definitely and probably 1·05 per cent. were suffering from latent tuberculous lesions of the adult type.

As the examination is carried out solely by x-ray, these people there is no evidence of their clinical condition, but it is presumed as their [illegible] normal strenuous lives, under a certain amount of supervision, that they are symptomless. Their results, shown, though probable incidence of latent tuberculosis amongst the general population agrees with the estimates of other workers. They wish to show, and we think they go a long way to [illegible] that young adults selected as with signs and symptoms is usually preceded by a period of latent negative lesions. These are no signs or symptoms of the lesion, but [illegible]

[redacted] because until when discovered, it is far advanced [redacted] frequent x ray examination the only means of early [redacted] improve our youth by Physical Education and to [redacted] ith rate for young adults from tuberculous is stationary [redacted] Early treatment saves time money and lives

[redacted] run a different course among people of different ages [redacted] age periods" It cannot be wholly due to variations [redacted] a thought-provoking lecture Burrell suggests that [redacted] present or absent in the body—particularly that of [redacted] causes excessive activity in the early years of the adult [redacted] makes on the need for proper early treatment for these [redacted] people [redacted] necessitates early diagnosis and the more frequent and [redacted] use of artificial pneumothorax Maurice Davidson continues in a slightly [redacted] way the discussion on why various individuals react to tuberculous [redacted] in different ways He suggests that some day the reason will be found [redacted] Brochner not that there will be few who will challenge this idea The [redacted] nes have been limited for many things, but we know little yet of their [redacted] actions and why and how they do function

Wrigglesworth has described very fully the three types of relapse which may be expected in chronic cases or even in cases discharged arrested Each type is dealt with under pathology aetiology clinical picture and x ray appearance and treatment The vital importance of immediately discovering that there has been a relapse and the knowledge of what form it may take and how to treat it may save the patient much further ill health and money not to mention his life The finger of spreading lesions is a great one and once again the x ray is our most worthy ally Relapse will usually be far advanced if physical signs alone are relied upon

The type of patient suitable for sanatorium treatment and the capacity for work of tuberculous patients are two subjects treated in further articles, followed by a paper on the after cure of tuberculous patients in London These are only of passing interest to the Naval Medical Officer, as it is unlikely he will ever have to meet such questions during his service life, at least

The steady increasing number of thoracoplasties being performed is a sure index to the value of this operation especially for the treatment of phthisis Its success has led to attempts being made to treat unsuitable cases and the mortality has been high except in the hands of the most experienced surgeons The method of selection of cases and the precautions necessary before thoracoplasty is contemplated are described clearly by I H Young It must be remembered that [redacted] irrevocable step there is no means of return once the operation has been performed The Registrars of Brompton Hospital have produced a report on the results of thoracoplasties performed in the hospital during the past fourteen years They reach the following conclusions —

(i) Thoracoplasty is a possible method of treatment in approximately 6 per cent of all cases of pulmonary tuberculosis

(ii) The operative mortality is about 14 per cent

(iii) The expectation of survival for those T B cases which are suitable for thoracoplasty is approximately three times as great as that of the average T B case

(iv) Of the survivors some 15 per cent are clinically cured

There may seem to be little to be enthusiastic about in these statements Consider only 14 per cent mortality, a slight risk when the chances of survival are so great And what other method can show *clinical cures* in chronic fibroid [redacted]

The Surgery of Pleural and Pulmonary Infections is a complete survey of the modern surgical methods of treatment of such various conditions as bronchiectasis, chronic empyema, lung, abscess and pulmonary tuberculosis

[illegible] of [illegible] with [illegible] most detail on the surgical method [illegible] need no longer [illegible] while of misery for themselves [illegible] used pneumothorax [illegible] offers the most satisfactory answer [illegible] of 16 per cent. at operation but many are willing to risk [illegible] success experience is necessary or this great advance will [illegible] The author's own operation for the treatment of chronic [illegible] It has been performed many times by him with good result [illegible] of these cases are often so disappointing surgeons will be pleased to know that good results can be obtained The article is well illustrated by a number of x-rays

Finally there are two short papers one on Massive Collapse of the lung or the author prefers to call it Absorption Collapse The other article details the modern technique of bronchography with opaque media The author describes the anatomy showing that there are fundamentally four lobes on each side each with its bronchial ramifications and to obtain a reasonable idea of the condition of the bronchial tree these must all be outlined

The Hospital Report concludes with the Annual Medical Report for 1935 It is a surprise to find the large number of general medical conditions treated in the hospital and gratifying to see the high percentage of improved cases The surgical part of the Report shows a steady increase in the number of major operations performed It finally ends with two short appendices one on the incidence and treatment of pulmonary abscess but the number of cases is so small that no useful conclusions are reached

The other appendix is a report on the treatment of carcinoma of the lung by radon The conclusion reached is that radon treatment does not prolong life in those cases where malignant new growth is proved

This outline of the contents cannot do justice to the general excellence of the Report Every article is easily read and there is a great amount of information in these few pages It is stimulating and pleasing to know how much can now be done for those who suffer from chest diseases For so long they were such hopeless conditions It also suits the reader thinking, which is the highest aim that any book can have

DIAGNOSIS OF SOME DELUSIONAL INSANITY TYPES IN GENERAL PRACTICE By Edwin Hopewell Ash M D Lond First Edition 1936 Pp 64 London John Bale Sons and Curnow Ltd 83 91 Great Titchfield Street, W 1 Price 3s 6d net

This little monograph is aptly described as a summary of important diagnostic points The author throughout makes a plea for the early recognition of these types of mental disease, and sets out to show the signs which may help the practitioner

The old term dementia praecox has now given place to Schizophrenia a word which sounds formidable to many of us The former was meant to mean as dementia is not a predominating symptom nor does it always occur in young people Schizophrenia means a splitting or disintegration of the mind The earliest signs of schizophrenia are deviations from normal conduct Heredity would appear to play a big part in the etiology and as Hoch put it like the post the dementia praecox is born not made

Throughout this little book the author gives several useful tables of symptoms and differential diagnosis e g from anxiety neurosis and manic depressive states The early signs of schizophrenia are withdrawal of social interest emotional coldness and over indulgence in phantasy

Many normal persons may exhibit these traits but for them there is always a road back to ordinary life

The schizo[illegible] [illegible] many basis
The author does not [illegible] [illegible] cent, but he quotes many [illegible] cases of early delusional insanity types
This little book will help any of us who are interested in psychological medicine, and should that not mean every Naval Medical Officer?

[illegible] Cancer and Zinc By Douglas Berton Crawshank, L R C P & S L D S Edin D P H Camb Member of Research Staff, Peckham Village Settlement 1936 Pp xv + 75 London Medical Publications, Ltd Price 7s 6d net

This very original publication consists of an ingeniously advanced hypothesis The author diffuses argument is based on the assumption that the defence mechanism against tuberculosis is of the nature of a bacteriophage, and that this particular phage in itself pathogenic to man, its own manifestation being cancer It is shown that the sum of the cancer and tuberculosis death rates in this country and abroad has remained constant for many years and that a corresponding reciprocal relationship is found in animals, the creature which resists tuberculous being susceptible to cancer Cancer and tuberculosis are thus shown to be antagonistic, and it is argued that they can only be directly antagonistic if the growth of one disease prevents the development of the other Cancer, however does not develop till later years and its growth does not, apparently, influence an early death from tuberculosis, yet its specific influence must be averted on the tubercle bacillus at or near the time of infection The epidemiology of the two diseases is thus explained by the existence of a cancer phage which parasitizes the tubercle bacillus
The author believes that tuberculosis is related to a deficiency of zinc and that cancer is associated with an excess of this metal He shows us how the tuberculosis death rate has steadily fallen since the introduction of galvanized or [illegible] corrugated iron in 1837 and tells us that species of animals which are resistant to tuberculosis had their origin in certain localized geological ancillerous zones In the arboreal environment of the zinc industries cancer reaches its highest and tuberculosis its lowest mortality level, despite the fact that other respiratory diseases have an unusually high incidence among the workers
Dr Cruickshank makes it clear that his monograph is in the nature of an hypothesis and believes that the propositions which emerge from his arguments should be capable of experimental verification It is obvious that many of his [illegible] are easily available, and we doubt very much whether publication was [illegible] before the author had prepared a more definite case Sir Pendrill Varrier Jones who writes the introduction evidently had some doubt on this [illegible] but after consideration advised the author to publish his ideas on the [illegible] that other workers may be able to make use of them and prove them or [illegible] them as the case may be We are not, however much impressed by the hypothesis as it is presented in this volume.

[illegible] Methods in the Diagnosis and Treatment of Venereal Diseases By John Lees D S O M A M B, D P H I R C S Edin F R C P Edin I R C P Lond Third edition, edited and revised by Robert Lees, M B, I R C P Lond Assistant Medical Officer for Venereal Disease to Edinburgh Royal Infirmary and Edinburgh Corporation 1937 Pp 504, with 98 [illegible] plates and illustrations Edinburgh E and S Livingstone 16 17 Teviot Place Price 15s net, postage 6d

The third edition of this very useful book sets out as did its predecessor of 1931 to provide the student and practitioner with a concise and practical guide to the treatment of the venereal patient

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[illegible]

[illegible] the truth [illegible]

[illegible] a page and a half [illegible]

[illegible] to nerves, muscles, tendons [illegible] elementary nature [illegible] dislocations [illegible] special dislocations described [illegible]

[illegible] described in Appendix C and this [illegible] book.

A MANUAL OF [illegible] DIAGNOSIS FOR STUDENTS [illegible] By Ivan C. C. Tchaperoff, M.A., M.D. [illegible] St. Thomas's Hospital, London. [illegible] 286. W. Heffer and Sons, Ltd. [illegible]

[illegible] radiological diagnosis has a definite [illegible] rays and is a synopsis of the [illegible] students and general practitioners. [illegible] practical manner. The value of a systematic method [illegible] the information afforded by radiograms [illegible] and this publication can be thoroughly [illegible] radiology, or to any prospective [illegible] surgery.

## News of the Service.

### ADMIRALTY ORDERS

**73.—"Novutox" Local Anæsthetic.**

(M.D.G. 11838 [illegible])

[illegible] bottles of "Novutox" local anæsthetic [illegible] labelled in glass. Stocks of "Novutox" [illegible] returned to the R.N. Medical Depot [illegible] for local supplies of "Novutox" in replacement [illegible]

([illegible])

**118.—Nosological Return (Form M 178): Abolition of and Substitution by Medical Officers' Journal (Form M 179).**

(M.D.G. W. [illegible])

It has been decided to abolish the Nosological Return (M 178) as from January 1 [illegible] Medical Officers' Journal (M 179) are to be rendered quarterly as from January 1 [illegible]

[illegible]

| | | | |
|---|---|---|---|
| M. 173 (Canvas) | [illegible] | [illegible] | [illegible] |
| M. 179 ([illegible]) | [illegible] | [illegible] | [illegible] |
| M. 179 (a) | [illegible] | [illegible] | [illegible] |
| M. 179 (b) | [illegible] | [illegible] | [illegible] |
| M. 173 (c) | [illegible] | [illegible] | [illegible] |
| M. 173 (d) | 20 | [illegible] | [illegible] |
| M. 179 (e) | 20 | [illegible] | [illegible] |
| M. 173 (f) | 20 | [illegible] | [illegible] |
| M. 173 (g) | 200 | [illegible] | [illegible] |
| M. 173 (h) | 100 | [illegible] | [illegible] |

[illegible]

Article **1381** clause [illegible]

*Delete* [illegible]

Article **1385** clause [illegible]

*Delete* [illegible]

Article **1388** clause [illegible]

*Delete* [illegible]

Article **1393** [illegible]

*Delete* [illegible]

Article **1402**

*Delete* heading [illegible] Navy.

*Delete* clauses [illegible]

Article **1410**. *Delete* [illegible]

*Journals.*—The [illegible] made up to March 31 [illegible] casualties of medical [illegible]

[illegible] Squadron Medical [illegible]

3. The Medical Officer [illegible] [illegible] delay in forwarding the [illegible] Medical [illegible] General through [illegible] 855, 856, 875 and **1363**.)

Article **1411**. [illegible]

[illegible]

M. 173 (a) [illegible]

M. 173 (d) [illegible]

M. 173 (e) [illegible] **1415**.)

M. 173 (f) [illegible]

[illegible] **1417** [illegible]

M. 173 (g) [illegible]

M. 173 (h) [illegible]

[illegible] Article **1386** [illegible]

[illegible] ship [illegible] for [illegible] Article 1385 [illegible]

(i) Date [illegible]

(ii) The [illegible]

(iii) [illegible]

(iv) [illegible]

M 171 [illegible] Lab [illegible] Article 1386 [illegible] preference [illegible] ships [illegible]

M 1 9 [illegible] Article 1386 [illegible]

[illegible] As a general [illegible] and [illegible] the Medical Officer [illegible] conveyed [illegible] the Journal of the Medical Officer [illegible]

[illegible] Invalids borne for passage [illegible] Article 1400.)

[illegible] and gratuities [illegible] upon the case [illegible] have been recorded [illegible] Medical Officer's Journal of the ship [illegible] Article 1417 [illegible]

[illegible] Medical Journal (M 173)

(*A B and A I will be* [illegible])

### 343 —Form M 87—Notification of Change of Diagnosis

(M D C 1°914 35 —18 [illegible] 193[illegible])

It [illegible] decided that when [illegible] in hospital or sick quarters renders a change [illegible] necessary the Medical Officer in Charge shall inform the Medical Officer of the ship [illegible] from which the case was received

[illegible] has been established for this purpose and a first distribution as follows will [illegible] Naval Store Officer Royal Naval Store Depot Royal Victoria Yard, Deptford [illegible] copies becoming available —

| | |
|---|---|
| R[illegible] Hospital Haslar | 3,000 |
| [illegible] Hospital Plymouth | 3,000 |
| [illegible] Hospital Chatham | 2,000 |
| R N Hospital Portland | 500 |
| [illegible] Hospital Malta | 1,000 |
| [illegible] Hospital Hong Kong | 1,000 |
| [illegible] Hospital Bermuda | 300 |
| R[illegible] Hospital Cape | 300 |
| [illegible] Malta | 300 |
| [illegible] Shotley | 120 |
| [illegible] Works [illegible] | 100 |
| [illegible] M O [illegible] H M Dockyard Gibraltar | 300 |

### 344 —Form M 288—Medical Record Book—Institution

(N [illegible] 5049 [illegible] —18 2 193[illegible])

[illegible] Medical Record Book [illegible] has been added to the establishment list as a bound book [illegible] ships for recording medical particulars of ratings including vaccinations [illegible]

[illegible] becoming available a copy will be forwarded without demand to all [illegible] a medical officer Thereafter copies required by ships are to be obtained [illegible] Naval Hospital [illegible] with other Service Afloat forms and stores

## HONOUR

[illegible] Captain [illegible] E Hatcher O B E [illegible] to be Commander of the Military [illegible] Order of the British Empire (C B E)

## DEGREES AND DIPLOMAS

Surgeon L[illegible] Commander J J Kissell M B B Ch [illegible] at M B Camb

Surgeon Lieut[illegible] W J E Gould M I [illegible] B Ch graduated M E S [illegible] 1936 He was also awarded the Stanley Sikkim Gold Medal [illegible] and his thesis received commendation

Surgeon Lieutenant I C Macdonald M B Ch B M R C I Edi[illegible] on December 18 1936.

## RETIREMENTS

Surgeon Commander A E Phillips M B B Ch retired at [illegible] 1936

Surgeon Lieutenant Commander C Ormsby Davis L R C P (S [illegible] at his own request January 13 1937

Surgeon Lieutenant J J Henry M B B I D P H resigned D[illegible]

Surgeon Lieutenant D Fweil M B B S withdrew January 11 [illegible]

Surgeon Lieutenant S R G Hume L M S S A D M R placed [illegible] regiral February 15 1937

Surgeon Lieutenant D W Walker M B Ch B withdrew Febru[illegible]

## PROMOTIONS

Surgeon Lieutenant-Commander C Killing M S M I R C I S [illegible] Commander January 15 1937

Surgeon Lieutenant-Commander R B McVicker M R C S I R[illegible] Commander January 8 1937

Surgeon Lieutenant J M Reeve M R C S L R C P D T H to [illegible] Commander January 28 1937

Surgeon Lieutenant S K Foster Ch B M R C S to be Surgeon Lie[illegible] Treasury 26 1937

Surgeon Lieutenant I L S Conlon M R C S L R C I to be S[illegible] Commander February 1937

Surgeon Lieutenant (D) E J Goldsworthy L D S to be Surgeon [illegible] (D) January 8 1937

Surgeon Lieutenant (D) J C Benson, L D S to be Surgeon Lieu[illegible] January 21 1937

## APPOINTMENTS

December (1936)

Surgeon Commanders C H Savory M R C S L R C P to H M S [illegible] A C V Green M B L R C P to Jupiter (at Leith) (F M I)

Surgeon Lieutenant I A Lage M B Ch B to R M Infirmary Dev[illegible]

Surgeon Lieutenant (D) W I Monteith L D S to Isle of Sheppey

JANUARY (1937)

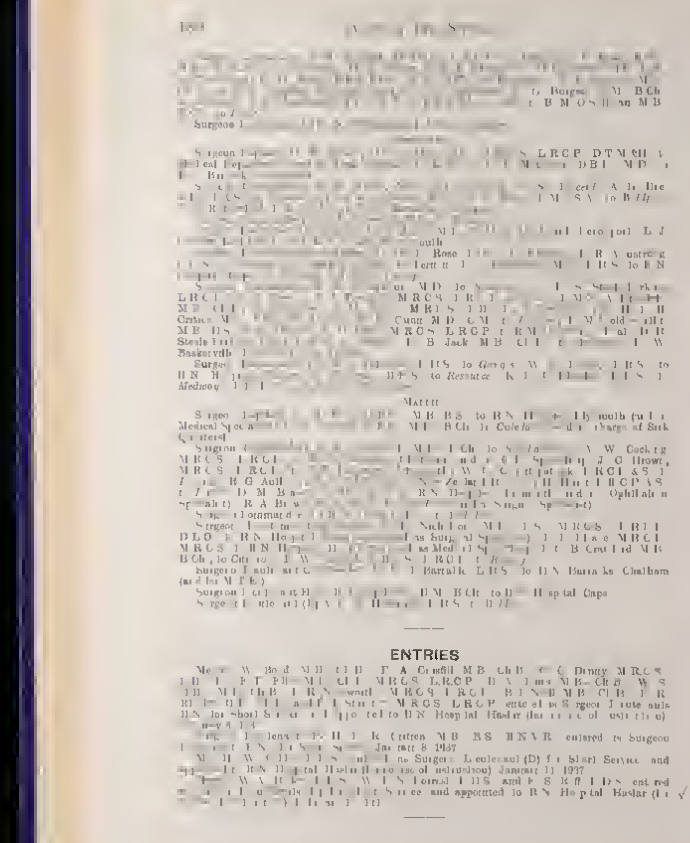
Surgeon Captain J G Beal M B Ch B to R N Hospital H[illegible] Specialist) J F Shorter D S C L R C P & S to R N Hospital Mal[illegible] Specialist)

Surgeon Commanders I C P Neal M B Ch B to Tamar and as Flot[illegible] and for R N Sick Quarters We[illegible] W E H Y M R C S L R C P Defence Experimental Station Fariow O D Brownfield D S E M B R S [illegible] Sick Quarters Portsmouth I F Fitzsimmons L R C P & S to R N H[illegible] (and as Ophthalmic Specialist) N B de M Greenstreet M H Ch to R C S I [illegible] T B Crawford M B B Ch to R N Barracks Portsmouth (and as Specialist) Joanna M B B Ch to Royal G S Rothesay H I R I C S to R N Barracks [illegible]

Surgeon Commander (D) R I Williams B D S to R M Infirmary Eastney L D S to Curaçoa A Macpherson L D S to R N Barracks Portsmouth

Surgeon Lieutenant-Commanders T P Crean L R C P & S I L R C S to H M S [illegible] (and as Specialist in G U) A R Ivens M B B S to Sable A J L H A L R C P [illegible] Rochester F W Cayford M R C S L R C P to Malaya (and to C [illegible] Froggatt M B Ch B to R N Hospital Chatham D F Weil M B B S [illegible] W R S Partridge M R C S L R C P to Nirbous

Surgeon Lieutenant-Commanders (D) R W Stevens L D S to Pembroke L D S, to Hecate



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## ENTRIES

---

## WARDMASTERS

[illegible] to Acting Warrant Wardmaster [illegible]

## ROYAL NAVAL VOLUNTEER RESERVE

### APPOINTMENTS

December 1946

[illegible] Commander R. A. [illegible] M.B., B.A.O., D.P.H. [illegible] Division [illegible]

[illegible] W. I. Thomas, M.R.C.S., L.R.C.P. [illegible]

January 1947

[illegible] Commander [illegible] M.R.C.S., L.R.C.P. [illegible] January [illegible]

[illegible] to R.N. Barracks [illegible]

[illegible] R.N. [illegible]

[illegible] to R.N. Barracks [illegible]

[illegible] L.D.S. to R.N. Barracks, Chatham.

[illegible] M.B. [illegible] L.R.C.P. [illegible]

February

[illegible] Sussex [illegible]

[illegible] A. Mather, M.B., Ch.B. [illegible] Sussex [illegible]

[illegible] to R.N. Barracks [illegible]

[illegible] L.D.S. [illegible] R.N. Barracks [illegible]

March

[illegible] F. A. [illegible] R.N. Hospital [illegible]

[illegible] to R.N. Barracks [illegible]

### PROMOTIONS

[illegible] D. Williams [illegible] Surgeon Lieutenant-Commander [illegible]

[illegible] A. Mather, M.B. [illegible] Surgeon Lieutenant [illegible]

[illegible] B.S., M.B. [illegible] Surgeon [illegible]

[illegible] M.R.C.S., L.R.C.P. [illegible] Surgeon [illegible]

[illegible] Surgeon Lieutenant [illegible]

[illegible] M.B., B.S., M.R.C.S., L.R.C.P. [illegible] Surgeon [illegible]

[illegible] Surgeon [illegible]

[illegible] M.B. [illegible]

[illegible] M.R.C.S., L.R.C.P. [illegible]

[illegible] Surgeon [illegible]

[illegible]

### RETIREMENTS AND RESIGNATIONS

[illegible]

[illegible] M.B. [illegible]

### DEATHS

[illegible] Surgeon [illegible]

## NAVAL MEDICAL COMPASSIONATE FUND

### Account of Receipts and Payments for the year ending December 31, 1936

| | £ s d | £ s d |
|---|---|---|
| [illegible] Bank on January 1 1936 | | |
| [illegible] Account | 50 10 6 | |
| [illegible] Account | 103 1 2 | |
| | | 153 11 8 |
| [illegible] Consolidated Stock— | | |
| [illegible] | | |
| [illegible] 1936 £51 6 11 | | |
| [illegible] 56 0 | | |
| [illegible] 15 6 0 | | |
| [illegible] 66 0 0 | | |
| | 250 1 11 | |
| [illegible] Consolidated Stock— | | |
| [illegible] 33 5 0 | | |
| [illegible] Interest 33 5 0 | | |
| | 66 10 0 | |
| [illegible] Consolidated Stock— | | |
| [illegible] 11 16 11 | | |
| [illegible] Interest 16 10 2 | | |
| | 23 6 1 | |
| [illegible] War Loan | 10 10 11 | |
| | | 350 5 0 |
| Income Tax [illegible] | | |
| [illegible] Consolidated Stock— | | |
| [illegible] | 14 18 1 | |
| [illegible] | 14 29 1 | |
| [illegible] Stock | | |
| [illegible] 1936 | [illegible] | |
| [illegible] | | |
| [illegible] | 7 14 7 | |
| | | 41 0 0 |

| | £ s d | £ s d |
|---|---|---|
| Awards to Orphans and Widows | | [illegible] |
| Secretary's Allowances | | [illegible] |
| Auditor's Fee | | [illegible] |
| Balance at Bank on December 31 1936 — | | |
| Current Account | £134 1 10 | |
| Deposit Account | 103 11 4 | |
| | | [illegible] |

---

| | £ s d | £ s d |
|---|---|---|
| Income Tax Refund in respect of — | | |
| [illegible] 2½% Consolidated Stock— | | |
| Due January 5 1936 | 14 18 1 | |
| 4% Consolidated Stock | | |
| [illegible] Interest 1936 | 3 14 7 | |
| | | 18 12 8 |
| Donation | | 1 1 0 |
| Subscriptions | | |
| Year 1934 | 1 1 0 | |
| 1935 | 2 2 0 | |
| 1936 | 85 5 0 | |
| 1937 | 1 1 1 | |
| [illegible] | 4 1 0 | |
| | | 273 11 0 |
| [illegible] Deposit Account | | 1 0 |
| | | £814 14 2 |

In addition to the above Cash Balance [illegible] Stock [illegible] following amounts were standing at the close of the accounts at the Bank of England in the name of the Trustees [illegible]

* £10,600 2½ per cent Consolidated Stock
* £100 3½ per cent War Stock
* £1,200 4½ per cent Consolidated Stock
* £895 10s 4d 4 per cent Consolidated Stock

[illegible]

[illegible]

[illegible]

[illegible] for 1934 eight for 1935 and eleven for 1936 [illegible]

[illegible]

## QUEEN ALEXANDRA'S ROYAL NAVAL NURSING SERVICE

### HONOUR

Miss H. W. Beale, Matron, awarded Royal Red Cross, Second Class (A.R.R.C.), February

### ENTRIES

Miss M. Wilkes, on qualification and appointed to R.N. Hospital

Miss E. H. Lee, entered as Nursing Sister on probation and appointed to R.N. Hospital, Haslar, March 10, 1917.

Miss A. M. Higgins, entered as Nursing Sister on probation and appointed to R.N. Hospital, Malta, March, 1917.

### APPOINTMENTS

Miss M. Miss, R.R.C., to R.N. Hospital, Haslar, March

Miss A. Reid, A.R.R.C., R.N. Hospital, Plymouth, February 1917.

Miss E. M. Beale, A.R.R.C., to R.N. Hospital, Haslar, March 1917.

Miss Mary [illegible], to R.N. Hospital, Malta, 1917.

Miss M. S. Bell, Matron to R.N. Hospital, Malta, Miss E. H. Lee, R.N. Hospital, Haslar, to R.N. Hospital, Chatham, March 1917.

### RESIGNATIONS

Miss [illegible], R.R.C., A.R.N.N.S., terminated March

Miss A. L. R. [illegible], January 1917.

Miss M. Mitchell, March 1917.

### PROMOTIONS

Miss B. M. Miss, R.R.C., to be Matron, dated A.R.N.N.S., March 10, 1917.

Superintending Sister Miss E. M. Beale, A.R.R.C., to be Matron, March 1917.

Miss Sister Miss N. [illegible], to be Superintending Sister, March 10, 1917.

Miss Sister Miss [illegible], to be Sister, dated May 6, 1917.

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## NAVAL MEDICAL COMPASSIONATE FUND

The quarterly meeting of the Fund held on January 29 at Lincoln's Inn Vice-Admiral Sir R. H. [illegible], K.C.B., Medical Director-General of the Navy, in the Chair. Thirteen cases considered, and £60 voted to the applicants. The following was a summary of the cases:—

Widow, aged 70, and 71 of a Staff Surgeon who died in 1866. The thirteen pensioners become [illegible] on the list received from the Admiralty. Voted £1 each, so that both will be eligible for the Old Age Pension. Total amount received from the Naval Medical Benefit Fund at various awards, £21 13s. 10s.

Widow, aged 61 and 61 of a Fleet Surgeon who died in 1878. They have never been able to [illegible] and there is no one to look after them. Voted £10 and £15 each. Total amount received from the Naval Medical Compassionate Fund at various awards, £21 13s.

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## Balance Sheet 1938

# Notices.

[redacted] to Medical Officers to [redacted] travel personal expenditure [redacted] Items [redacted] direct to the Naval Medical Service will be [redacted] [redacted] ments on home and foreign [redacted]

[redacted] Communications published in the JOURNAL [redacted] Medical Service will become the property of the [redacted] [redacted] unless the author declares when sending [redacted] to reserve the copyright to himself

[redacted] Births, Marriages and Deaths are inserted free of charge [redacted]

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DEPUTY INSPECTOR GENERAL ROBERT McCORMICK
F.R.C.S., R.N., 1859

Vol. III. XXIII [illegible] 80

# Journal
of the
# Royal Naval Medical Service.

## Original Articles.

### DEPUTY INSPECTOR-GENERAL ROBERT McCORMICK, F.R.G.S., R.N.

*Proc. Hl. Hlustrd. Naval and Military Magazine, Vol. I. 1897.*

COMMUNICATED BY SURGEON LIEUTENANT-COMMANDER S. JENKINSON, R.N.

In 1889 Robert McCormick was the oldest surviving officer of the Naval Medical Service of whatever grade. His services extend over the long period of sixty-five years in every quarter of the globe from pole to pole. He is now in his eighty-ninth year inheriting one of the oldest Irish names from 'Cormac, one of Hibernia's ancient chieftains as narrated in the pages of Ossian's Early Kings of the Green Isle.

The father of Robert McCormick also a naval surgeon was a native of the county of Tyrone, in the North of Ireland born in the same 'old homestead of Bally Reagh in which the family had resided for long generations. After completing his medical education in the University of Edinburgh he entered the Royal Navy in the year 1795 on board H.M.S. *Powerful* 84 and after a cruise in her received his promotion as surgeon of the *Inspector* sloop of war on the North Sea station, about the period of the battle of Camperdown and eventually after long and meritorious services during the war against Napoleon, lost his life in the Baltic by the shipwreck of H.M.S. *Defence*, 74, on the Christmas Eve of December 1811 on the coast of Jutland when in company with the *St. George* 98, bearing the flag of Rear Admiral Reynolds. Both ships shared the same fate in a hurricane that did much damage to their convoy of merchantmen.

Robert McCormick was born in the village of Rainham, near Yarmouth, in Norfolk on July 22, 1800 not far from the birth place of the immortal Nelson who had been engaged in a voyage towards the North Pole under Captain Phipps, afterwards Lord Mulgrave, before the close of the last century, as the subject of this memoir was in the beginning of the present one under the late Sir Edward Parry.

Mr Mc[illegible] executive branch of the Service but was from the [illegible] Father and the advent of the subsequent peace, deprived of the great ambition of his life, the wearing the midshipman's white patch on the collar of his coat. Ultimately, however, after completing his medical studies as a pupil of his old friend and fellow townsman, the late distinguished surgeon Sir Astley Cooper, Bart. he obtained his diploma from the Royal College of Surgeons of England, on December 6, 1822. In the following April he was appointed to H.M.S. *Queen Charlotte*, of 108 guns, bearing the flag of Admiral Sir James Hawkins Whitshed, at Portsmouth and from her was appointed as a supernumerary on the West Indian station, with four other young medical cadets to fill up the vacancies occasioned by deaths from yellow fever on the station. He sailed in the month of August from Falmouth in the *Sandwich* packet, Captain Adomah Schuyler, and on arrival at Jamaica joined H.M.S. *Gloucester*, 74, Commodore Sir Edward Owen. After some two years spent in a corvette-cruising after pirates and slavers on the Windward Station, visiting most of the Antilles, the Spanish Main and South America as far as Para on the Amazon, he was compelled by a severe attack of yellow fever to invalid home in the autumn of 1825, returning to England in the *Icarus*, 10 gun brig. He was subsequently appointed to H.M.S. *Ramillies*, 74, in the Downs, and was employed in her tender, the *Antelope* cutter during that tempestuous winter in the North Sea and during the succeeding summer at the Lpple Bay station of the coast blockade. On Sir Edward Parry commissioning the *Hecla* for an attempt to reach the North Pole in 1827, Mr McCormick was selected as the medical officer through the recommendation of his old tutor, Sir Astley Cooper. Sir Edward Parry, in addition to his duties as medical officer gave him the charge of the natural history department, and also that of a lieutenant's watch during his own absence from the ship in the boats. Sir Edward, having noticed his proclivities for natural surroundings was justified in his selection of Mr McCormick who had from his first entrance into the Service when on board the *Sandwich* packet, taken his daily observations and kept his own log, and ever afterwards made navigation and seamanship go hand in hand with his ordinary professional duties. This was in the hope of some day having the good fortune to get the command of an expedition of discovery to one of the Poles, which had always been the ambition of his existence and it is only due to the memory of one of the most steadfast friends he ever had the late Sir Astley Cooper, to say that he owes to him his participation in polar discovery. In the strong competition for appointments to the *Hecla* made at the Admiralty, it was entirely through Sir Astley's powerful appeal on behalf of his scientific attainments and spirit of enterprise that Sir Edward Parry was enabled to obtain his services.

On the return of the expedition Mr McCormick was introduced by Sir Edward Parry to H.R.H. the Duke of Clarence, then Lord High

Admiral, with other officers on the quarter-deck of the *Hecla*, and on the paying off of the ship received his promotion and first step in the Service at the hands of His Royal Highness He served again in the West Indies making altogether three stations in the tropics His health having suffered much from the West Indian climate on his return home, in the autumn of 1834, he commenced a pedestrian tour through England and Wales both for the purpose of the re establishment of his health as well as to qualify himself for an Antarctic expedition which his former shipmate with Parry Captain James Clark Ross had in view and had promised him he should share

During some four years he walked over every county in England and the greater part of the sea-board of Wales a distance amounting in the aggregate to some four thousand miles He often averaged thirty five miles a day, and on the very last of the tour in Wales passed Snowdon and across Anglesea to Holyhead, accomplishing no less than forty six miles his longest day's journey

In the year 1836 he joined the *Terror* at Chatham sent for the relief of the icebound whale ships and on the commissioning of H M ships *Erebus* and *Terror* in April, 1839, for the voyage of discovery to the Antarctic seas Mr McCormick received his commission to H M S *Erebus* as senior medical officer, naturalist, and geologist to the expedition returning in the autumn of 1843 after four years of toil and perils Yet on the return of the expedition, after attaining the highest latitude ever reached before and the discovery of a vast southern continent which, although in a complete state of glaciation, probably exceeds in magnitude any one of the old continents so little was thought of the claims of the medical and scientific branches of the Service that, notwithstanding the promotions of all the eligible executive officers the former were left out in the cold The senior medical officer after remaining on half pay for two years was at last appointed to the *William and Mary* yacht at Woolwich a life appointment when he joined her On her being broken up he was after completing the usual three years in the *Pique* frigate, relegated to half pay, but when alarm took possession of the public mind as to safety of the Franklin Expedition Mr McCormick was the first to call the attention of the Admiralty and the Geographical Society to the perilous position of the *Erebus* and *Terror* He offered to conduct a boat expedition down the Coppermine River to the Polar Sea and to explore the very same western shore of King William's Land and its vicinity where subsequently the all important record of their fate was discovered by Mr McClintock near Cape Felix

Subsequent events have already proved that had Mr McCormick's plan of search via the Coppermine River been carried out, as he had proposed in the year 1847 he would have met the remnant of the crews of the *Erebus* and *Terror* at the very time that, as the Esquimaux stated, they were toiling their way along the western coast of King William's Land dropping

[illegible] retired [illegible] Royal Navy

When Mr McClintock after urging his plans upon the Board of the Admiralty, finally got out in the *North Star* mainly through the support given him by his most valued friend the late Sir Francis Beaufort the distinguished hydrographer to the Admiralty and others, he was, on the arrival of the expedition at Beechy Island, detained there so long before a boat was given him by the commodore that the season was too far advanced to accomplish anything beyond setting at rest the most question as to the existence of communication between Baring Bay and Jones's Sound. This was solved after three weeks buffeting with the short cross seas of the Wellington Channel during the boisterous autumnal gales then blowing His small boat, the *Forlorn Hope*, after having had her rudder carried away by the drift ice, was only saved from foundering by running her aground under the lee of two small bergs to bale her out, then being more buoyant she ran before the gale to the embouchure of Baring Bay He encamped under the Black Mount named by him Mount Providence, after sledging all round the Bay without finding any opening in the land, or track of Franklin

On returning to his ship during the winter in Erebus and Terror Bay, he explored all the vicinity around and on March 1st he was benighted during an excursion to Caswall's Tower, some ten miles from the ship, in a dense fog and had to bivouac in the snow drift with his two Esquimaux dogs and a companion Dr Torrs, of the *North Star* throughout the long arctic night In the ensuing spring, having volunteered an attempt to reach the North Pole if given the command of the *Mary* yacht of some twelve tons, in which his former boat's crew had volunteered to accompany him, and this offer having been declined by the commodore he returned home in H M S *Phœnix* Captain Inglefield and did not obtain his last step until May 1859, six years afterwards

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## AVERTIN AND EVIPAN

By Senior Lieutenant GERALD FIMM R N (Ret)

### Avertin

In an attempt to find the perfect anæsthetic agent the human body has been attacked from all angles, e g inhalation, spinal, nerve blocking oral administration rectally and intravenously as well as intramuscularly Each has its own particular uses and merit and most often it is a combination that is found most useful

There are numerous makes of drugs for oral administration—chiefly one or other of the barbiturates e g sodium alurate sodium amytal, i e sodium iso-amyl ethyl-barbiturate This group is chosen because it is pleasant to take, does not make the breath smell—like paraldehyde for example—and the after effects, such as headache nausea &c, are less frequent

[illegible] (Sellar [illegible]) [illegible] thrown a [illegible] unveil [illegible].

Morphia [illegible] drug, and its action [illegible] unexpected in [illegible] there is a state of [illegible] rather than of lassitude—and there are others who appear to be quite immune to its action. One writer (Saunnuel) writes that in some instances it (morphia) occasionally has the effect of hastening labour, in others it may have no effect on the progress of labour, and in a third group labour may be retarded for a very short time. Several times when employing morphia before a spinal analgesia, that is giving it one and a half hours before operation, patients have vomited—but only once—and then felt perfectly comfortable. True, some patients do vomit even without morphia, but they are usually the very nervous and apprehensive type—just the group which requires premedication. Hence it is very difficult to give all the credit to morphia for this phenomenon.

Much has been written and said for and against rectal anaesthesia. Years ago ethyl and oil was tried. In 1914 Gwathmey recommended paraldehyde 2 to 4 drams with an equal quantity of olive oil for rectal administration, and now to-day we have the German drug called avertin. A dosage table is supplied when ordering avertin. On this card are given full instructions such as: "The temperature must not exceed 40° C., and immediately before administration 1 to 2 drops of 1: 1 000 aqueous Congo red solution are added to 5 c.c. of the 2½ per cent. avertin solution. The resulting solution must remain bright orange red, &c." On one side is tabulated the recommended amount of avertin and distilled water for basal anaesthesia in general surgery and on the reverse side a similar table for Avertin Obstetric Dosage Table. It is a matter of personal judgment for the anaesthetist to increase or decrease the recommended amounts of this drug. A useful tip is to work with a dose which is intermediate between the surgical and obstetric—this I have found is usually sufficient to assure the patient sleeping peacefully when being wheeled into the operating theatre where the supplementary anaesthetic of gas and oxygen with or without the addition of ether is given, or perhaps only a local may be necessary. I choose this method as I consider it a very safe as well as a very satisfactory one. It also allows of a better estimate as to how the patient will take and tolerate the additional anaesthetic.

The ideal method of administering avertin is to have the patient in a quiet room which is semi-dark. At this hospital it is given in the ward thirty minutes before operation, the patient's bed being shut off with screens. Noise does not seem to worry the average sailor and within five to ten minutes he is sound asleep.

Dinamest, in France, ascertains the dosage by testing the ocular cardiac reflex as to whether the subject is vagotonic or sympathicotonic and if the latter he then slightly increases the dose.

The effect on respiration is that it is quiet and perfectly rhythmic, a

little shallow as in natural sleep Avertin has a much lessened effect on alcoholics and these patients usually talk or sing when going off and certainly take more of the drug to attain the desired result

I believe avertin has been given intravenously and that the period of narcosis is lessened although its action is very much quickened

Hepatic and renal diseases are contraindications to the use of avertin So far I have not heard it reported that this drug has had any ill effects on the mucous membrane of the rectum, colon, &c Naturally, if the colon is not emptied of its contents the absorption of the avertin is very much retarded and also tends to make the patient void the enema on the operating table It appears to be the faeces and not the fluid which stimulates the desire to defaecation

The advantages of avertin are —

1) Reduces psychic trauma and possibly physical injury to a minimum induction is very peaceful

(2) The margin of safety is increased

3) Greatly lessens the amount of gas, &c required for supplementary anæsthesia Economy not only as regards anæsthetic agents but economy of tissue and reserve less damage to the cells of the liver, kidney, &c

4) Does produce analgesia, a property which hypnotics do not possess

(5) Easily administered and easily stored

6) Post operative vomiting and post-operative pulmonary complications are rare

7) Patients who have had avertin often request it again

It is always advisable to avoid the giving of morphia when it is known that avertin will be used as the combination is found to depress the respiratory system materially

### Evipan

Evipan is a drug which is a barbituric acid derivative and used for the intravenous method of producing a rapid anæsthesia and fairly rapid recovery It was produced by Kropp and Taub and introduced in 1932 by Weese It is supplied in ampoules together with distilled water in separate ampoules which when mixed, produce a 10 per cent aqueous solution ready for injection

The method used here is this the patient is brought round to the operating theatre prepared for operation and a padded board which is just a little longer than the patient's arm is put under the selected limb and fastened with broad tape The middle third of the arm is thoroughly cleaned with spirit An assistant holds the patient's upper arm tightly so as to make the veins more conspicuous The aqueous solution of evipan is drawn up into an eccentric syringe which is marked off in cubic centimetres The needle is introduced into the vein and the patient asked to count slowly One c c at a time is slowly injected, careful observation of the patient's condition being noted The time required for loss of

consciousness varies with the rate and amount injected, usually fifteen to twenty-five seconds if injected fairly quickly—forty to sixty seconds if fairly slowly. As soon as the patient is unconscious his jaw is held up and if he is breathing well and the airway is not introduced but any signs of laboured breathing is immediately attended to. The injection is continuous the amount of evipan is determined according to the anæsthetic effect. It has seldom been found necessary to use more than 10 c.c. in fact, most often less has sufficed. The patient usually yawns just before becoming completely unconscious and presents an excellent opportunity to introduce a gag if necessary.

The operation should commence immediately consciousness is lost. The time of anæsthesia is dependent on the amount and rate of injection of the drug, an average being fifteen to twenty minutes. Much has been written regarding the fall in blood pressure, but this is only transient and is not disturbing to the patient with a normal blood pressure.

Occasionally restlessness and involuntary twitchings are observed which disappear with increase of dosage.

The after-effects too vary—some patients turn over and go to sleep after having gained consciousness—some state they feel drunk—and a few are noisy. None of the cases here have vomited and no harmful after effects have been observed.

Evipan is an excellent anæsthetic for minor operations, reduction of fractures or dislocations, manipulations, &c., and may be used for induction followed by gas and oxygen alone or with ether as outlined above.

It replaces ethyl chloride or light ether anæsthesia and does away with the dread of a mask or face-piece.

There is no specific antidote for evipan. The anæsthetist has to rely on coral coramin, carbon dioxide, &c., and should always have these at hand. It has been our practice here to have the Shipway apparatus ready so that carbon dioxide and oxygen may be administered at any desired pressure. There is only one great danger with selected patients and that is that of overdose, and this can be avoided by paying attention to important details.

In conclusion it may be said that evipan is an excellent quick and reliable anæsthetic agent for short operations and a very helpful induction for major operations. It is tolerated by nearly everyone and bad after-effects are very exceptional.

If contraindications, which are also those for ether, are faithfully observed, the drug will recommend itself and prove a useful friend to doctor and patient alike.

[illegible]

[illegible] profession in 1932 [illegible] has been published since then concerning [illegible] intended in this short article to reiterate its various properties, which by this time are well known to most of us

Briefly it differs from those barbiturates previously used such as [illegible] sodium amytal by being split up rapidly in the organism, and in this respect resembles gas and oxygen, and the more volatile anæsthetics

Its uses are —

(1) As a single administration with or without previous medication, and this probably still constitutes its main use to-day This method is suitable for performing minor surgical procedures, such as incisions, biopsies setting of fractures reductions of dislocations and dentistry, to mention but a few

(2) As an introductory narcotic to some inhalation anæsthetic by this means the quantity of added anæsthetic is kept small, and the excitable stages of an anæsthetic such as ether is entirely abolished

(3) As a short form of basal narcosis the inhalation anæsthetic used in most cases being gas and oxygen

(4) Prolonged anæsthesia with sodium evipan.

It is in the last named use of the drug that we have been particularly interested, and its application to certain selected cases i e surgical procedure lasting up to one and a half hours where maximum relaxation is not essential In this category are included most of the Service "routine operations such as repair of hernia meniscectomies mastoid drainage, and appendicectomies (using the Hamilton Bailey muscle-splitting incision) Where a laparotomy has to be performed using any other incision, I do not consider evipan by itself a suitable anæsthetic

Most anæsthetists [1] strongly deprecate the trend of evipan into major surgery pointing out that it seems entirely illogical and unreasonable to employ for lengthy procedures an anæsthetic agent, one of whose chief advantages is its essentially brief duration, no matter how easily that duration may be prolonged or how satisfactorily such procedures can be performed under it We are quite satisfied, however, that evipan can be employed with every success in the selected operative procedures mentioned, as no ill-effects on metabolism have been observed and the periods of anæsthesia have proved entirely uneventful

Technique of Administration —By continuous evipan anæsthesia

is meant the [illegible] of 10 per cent. evipan solution in interval doses over periods [illegible] longer than the usual twenty to thirty minutes of anæsthesia, although [illegible] full administration of the drug is 10 c.c.

Now in the Service [illegible] patient is commonly a healthy robust individual, different in all respects from the usual civilian patient who is in many cases, pathological and a poor risk for any form of anæsthetic and for this reason we have employed larger doses which bear no relation to those commonly used in civilian practice.

It must be borne in mind that though evipan is rapidly broken up in the organism it is a non-recoverable anæsthetic so that minute to minute controllability must be aimed at, maintenance doses being given during the course of the operation only when strictly essential.

(*a*) *Premedication.*—All patients receive premedication prior to the operation. This is given at least one hour before to prevent any cumulative effects, the optimum time being apparently between one and a quarter and one and a half hours. For this purpose we now employ a standard routine injection of omnopon $\frac{1}{3}$, scopolamine $\frac{1}{150}$ gr. the Hoffmann La Roche ampoule when dealing with active adult males.

(*b*) *Apparatus Employed.*—This has been described by Jarman and Abel [2]. Essentially this consists of a 10 c.c. syringe mounted on a small platform which in turn is secured to the forearm by a metal bracelet or elastic strap. Attached to the syringe is a three-way nozzle, one lateral position is in communication with a drip feed from a saline reservoir, the other is used for refilling the syringe as required, with the anæsthetic agent. The central position communicates by a small length of stout rubber tubing to the needle inserted into a vein and secured by elastoplast. The arm is steadied on a metal or wooden splint. During most of the operation 5 per cent. glucose in saline is run into the vein via the lateral feed at a rate varying from 20 to 30 drops per minute. This naturally keeps the needle patent, combats shock, assists the action of the evipan, and can, of course, should occasion arise, be used for the transfusion of blood.

(*c*) *Speed of Injection and Dosage.*—The syringe is first filled with 10 per cent. solution of evipan sodium and the needle inserted into a vein at the elbow. With the idea of fixing the evipan in the blood stream, and saturating the hepatic cells with glucose we have in several cases run in 5 per cent. or 10 per cent. glucose for several minutes prior to injection of evipan, and consider a deeper degree of anæsthesia is then attained.

Three c.c. of the evipan solution are now given fairly quickly [3], and then a safety pause of about forty-five seconds allowed. During this period the patient is closely watched and his reactions to the drug noted. The remaining 7 c.c. are now given at a slower rate and the operation commenced about two minutes later. Slight movements occur in some cases during the skin incision, but no further injection is made unless this persists, when a further 4 to 5 c.c. are administered and repeated if necessary.

No hard and fast rules can be laid down about dosage this is assessed by previous experience An airway is inserted as a routine procedure Rapid injection has been found to be most successful in producing a good degree of anæsthesia in robust patients The method suggested by Jentzer [4] and his associates (where after a slow injection of an amount of evipan sufficient to produce a natural sleep, which usually takes three to seven minutes, a similar amount is then injected rapidly) has been tried but does not give such satisfactory results as the former method The best indication of a light anæsthesia and the necessity for further maintenance doses has been found to be a deepening and increased rate of respiration During the course of an operation lasting forty five minutes to one hour it has not been uncommon to employ dosages of 30 to 40 c c of a 10 per cent solution without embarrassing the patient in any way

General Effects.—Induction is smooth and rapid There is some slight fall of blood pressure in some cases with a quickening of the pulse Respirations become slow and shallow usually after the first fifteen minutes of the operation but provided that a perfect airway is maintained, no cyanosis occurs Relaxation in all cases has been adequate for the particular operation

It has not been necessary to employ any respiratory stimulant such as coral or coramine although approximately six cases of our series have been given carbon dioxide and oxygen at the end of the operation as the respirations were rather shallow

After-effects.—As a general rule, most patients recover sufficiently after two to two and a half hours to answer questions, and then drop off to sleep again Restlessness occurred in three cases, but was easily controlled by a small injection of morphia Post-operative vomiting has been extremely rare, about three cases and does not occur in the absence of premedication with opiates

Summary.—In a short series of cases including 45 appendicectomies and 70 hernia repair operations, this method of continuous intravenous anæsthesia has proved satisfactory in all respects

We are convinced that for a certain class of surgical work in the Service, it is a safe and efficient anæsthetic and assuming that certain limits are not overstepped the method should not fall into disrepute Its advantages summarized briefly are :—

(*a*) Pleasant and smooth induction excitable stage being abolished

(*b*) Complete absence of post-anæsthetic complications

(*c*) Ease of administration

(*d*) Simplicity of apparatus necessary which makes it ideal for Service use under war-time conditions

(*e*) The cost compares favourably with other anæsthetics possessing these advantages

### The Operation

In 1934 and 1935 evipan was given at R N Hospital, Chatham, in a few cases of short duration such as incisions of abscesses and manipulations of joints

Its use was very slowly extended and given as a single injection for six o'clock casualties it proved simple in administration and very pleasant for patients

Its extension to major cases such as hernia was at first experimental, and was expected to exact considerable speed in operating

It proved unexpectedly satisfactory and when its continuous administration with saline and glucose was introduced, it was resolved to give the method an extended trial It has now been given in the following series of cases —

| | | | |
|---|---|---|---|
| (A) *Single Administration* | | | 206 |
| Including bilateral trephining of frontal sinuses with bilateral antrostomy | | | |
| Drainage of appendix abscess | | | |
| Drainage of empyema abscess | | | |
| Drainage of perinephric abscess | | | |
| Gastrostomy | | | |
| (B) *Continuous Administration with Saline and Glucose* | | | 171 |
| Including Inguinal hernia | | 70 | |
| | Appendicectomy | 17 | |
| | Meniscotomy | 10 | |

No case has given cause for anxiety and the method can be regarded as safe in competent hands

It was realized throughout the series that this factor of safety needed proof and statement

It is considerably cheaper than inhalation anæsthesia in equivalent cases

It is incomparably more pleasant for the patient during induction and recovery than any inhalation anæsthetic and greatly diminishes the fear of operation which has its origin in dread of being "put under"

There are no unpleasant after effects, and patients who have had inhalation and intravenous anæsthesia on different occasions are loud in their praise of the latter

Repeated administration does not appear to have the slightest ill effect— in one case of severe multiple injuries intravenous anæsthesia was induced on seven occasions within one month and repairs effected in a way which without it would have been almost impossible for repeated inhalation anæsthesia would have been too exhausting

It gives a relatively bloodless operation field which makes things easier for the surgeon than the congestion often associated with gas and oxygen and closure of the peritoneum is dramatically and unexpectedly easy

The method has, of course limitations Relaxation is insufficient for major laparotomies by midline incisions, and in many cases the skin is

slightly [illegible] even when the anæsthesia of the deeper layers is quite adequate

In one case of compound fracture of the leg in an alcoholic patient, no premedication was given and the intravenous evipan was followed by almost uncontrollable and violent excitement lasting nearly an hour

This case was unique, but premedication is essential for success

In conclusion, three points may be stressed

(1) That intravenous anæsthesia is already pleasant and safe, and that its chemical evolution is likely to develop its efficiency, the method has an undoubted future

(2) It is already sufficiently effective to have a great place in casualty and war surgery

(3) The writers should they be so unfortunate as to need surgical treatment within the limits mentioned above, would earnestly demand intravenous anæsthesia for the ordeal

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## THE TREATMENT OF PULMONARY SUPPURATION INCLUDING ITS SURGICAL RELIEF

By Surgeon Lieutenant Commander George A. Mason, R.N.V.R.

The achievements of thoracic surgery in the treatment of suppurative diseases of the lungs have recently received considerable prominence and the opportunity will be taken here of reviewing its scope in this field Probably the majority of such cases seen by the thoracic surgeon recover without operative treatment, but only after a prolonged period of observation

The conditions we will consider include suppurative pneumonitis, lung abscess and gangrene infected lung cysts and bronchiectasis Spontaneous resolution of the first three conditions and complete amelioration of symptoms in the last two—even in the inevitable persistence of gross anatomical deformity—occurs frequently Accordingly active surgical intervention is withheld until it becomes obvious that either the maximum spontaneous recovery has occurred or that the patient is in the optimum

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[illegible] Being a Post Graduate lecture given at the University of Durham College of Medicine September 16 1936 Reprinted from the *Post Graduate Medical Journal* November 1936 By kind permission of the Hon Editor and of the author

condition for it So long as a focus of pulmonary suppuration is active, so long is the patient in danger from intoxication, superadded broncho pneumonia or from metastatic intracranial sepsis Similarly patients with such diseases as bronchiectasis even when clinically dry are always in danger of relapse, the imminence—or what is of more importance for purposes of prognosis the likelihood—of such a relapse cannot be foretold Frequently patients who are regarded as 'dry' clinically are found to be swallowing large amounts of sputum

### Investigation and Preliminary Management

Investigation is of necessity withheld or delayed in the presence of acute illness Similarly, for more chronic cases where exhaustion is marked or where the general condition is bad investigation is modified

Rest preferably in the fresh air, and the provision of a diet—adequate in both quantity and quality—are the most important means available by which the general condition may be improved Massage to the limbs often has an excellent general tonic effect Vaccines are occasionally employed but the results are not impressive Breathing exercises, if carefully supervised by a masseuse fully conversant with their object and limitations, are an excellent means of ensuring efficient pulmonary ventilation if these are contra-indicated by the general condition and also as a supplementary measure, frequent inhalations of 'carbogen' gas are similarly useful Postural drainage strongly advocated by some, must be employed rationally and with caution; prolonged immobilization in an inverted position is not tolerated well by patients—some indeed exhibit alarming cerebral symptoms—and it is indisputable that, with the exception of those who are acutely ill, bronchiectatic patients improve most when they are not entirely confined to bed We prefer intermittent postural drainage and it is our custom to have the patient inverted, or held over the side of the bed with the involved lobe uppermost, for a short period during every waking hour, starting with perhaps one minute and eventually, if tolerated, for as long as five minutes

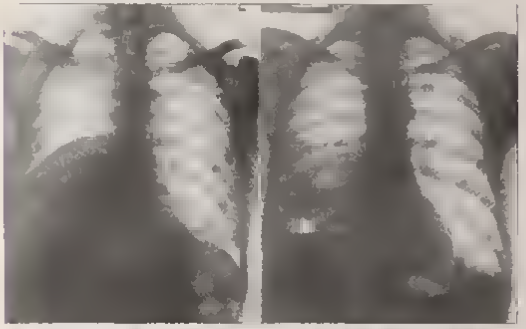
The sputum generally decreases in amount and becomes less offensive *pari passu* with the improvement in the general condition If it does not disappear entirely, its amount usually becomes stationary at a lower level in which case nothing is to be gained by withholding more active investigations and treatment

Radiological and bronchoscopic examinations are indispensable at some stage of the investigation of most of these cases It is our custom almost without exception, to perform bronchoscopy under general anæsthesia and to utilize the opportunity for obtaining a lipiodol picture of the bronchial tree—bronchography By these means it is usually possible to determine the nature extent and situation of the disease with considerable accuracy A surprising fact which emerges from a large number of these cases thus investigated is the relative rarity of gross obstructive conditions—such as

stricture [illegible] in bodies and growths—as etiological factors in pulmonary sepsis.

SUPPURATIVE PNEUMONITIS

Occasionally what has been regarded as an ordinary basal pneumonia fails to resolve in the customary manner. The persistence of an area of [illegible] behind and the occurrence of variations of fremitus or friction—possibly marked diminution, or even absence, at some small spot—lead to the suspicion that an empyema has formed even though breath sounds rather faint and of the bronchial variety are heard over the region involved. X ray examination at first sight would appear to support this suspicion, but the opacity in the film if carefully examined is seen to



[illegible] X ray of a case [illegible] Several days [illegible] Could [illegible] under pressure [illegible]

be not homogenous. This is really due to a patchy consolidation with an associated thickening of the overlying pleura (fig. 1). So close is the mimicry of the hidden pus—the patient at first may continue to lose ground and have an elevated or even swinging temperature, and there may or may not be purulent expectoration—that persistent and misguided attempts to demonstrate pus by needle exploration may be made and an occasional flake of pus is all that is found, but quite a brisk hæmoptysis is not unknown after this procedure. It is a strange belief that such an exploration may determine the onset of recovery. Certainly, recovery sometimes may appear

to start thus but it is a [illegible] coincidence Meddlesome explorations in these cases cannot be too strongly deprecated so great is the danger of inducing air embolism by opening vessels by inserting needles promiscuously into lung tissue

Expectant treatment if necessary for a prolonged period is usually rewarded by complete recovery and it should be persisted in for as long as the patient continues to improve Obviously if ground is being lost, or if the condition becomes stationary and resembles bronchiectasis, then operative treatment will be required

Exposure of the diseased lobe may be necessary and, if the mechanical problems involved are not too great it may be removed If the patient is too feeble or ill, or if the lobe is too adherent to permit of its removal without undue risk then adequate drainage may be provided by burning extensively into it with the cautery

### Lung Abscess and Gangrene

These conditions are so closely allied that it is often difficult to distinguish one from the other What may appear at first to be a localized abscess condition may ultimately prove to be a diffuse gangrene There are, of course, fulminating cases in which the frankly gangrenous nature of the disease is obvious from the beginning Similarly, there are cases in which, despite an apparently severe onset a well localized abscess ultimately forms These diseases may occur as complications of pre-existing pulmonary inflammations, such as pneumonia or bronchiectasis They may follow dental or other operations upon the upper respiratory tract or as delayed complications of thoracic or abdominal infections in a similar way to suppurative parotitis

Abscess formation may follow impaction of foreign bodies aspirated into the bronchi, in the presence of infection Most abscesses however even those following dental extractions develop without any such obvious cause recognizable either radiologically or bronchoscopically It is possible that in many instances the infection is blood borne causing septic infarction

Both abscess and gangrene are occasionally associated with pulmonary growths Infection of the secretion pent up in a bronchus behind a growth gives rise to an abscess the symptoms of which may predominate and completely mask the presence of the growth which may only be discovered during routine investigation or even during an exploratory operation Colliquative necrosis within a growth may simulate an abscess especially in an early picture Pulmonary growths may be complicated terminally by the sudden onset of a diffuse and fatal gangrene

Whether the process is to proceed ultimately to abscess or gangrene the initial change is probably identical being one of tissue necrosis This proceeds to liquefaction, and a cavity develops If the condition is to become a localized abscess, a zone of granulations, replaced later by fibrous tissue forms around it If this defensive reaction fails to eventuate, then the lung becomes diffusely gangrenous.

The onset which is usually sudden, may be ushered in with a rigor Coughing and pain in the chest are sometimes marked symptoms a sudden attack of pain accompanied by a slight hæmoptysis may indicate that, in an individual case, the initial process is one of infarction

Foul purulent sputum is freely expectorated and in the early stages, or so long as destruction of the lung substance continues, the sputum has a curious dark appearance resembling anchovy sauce When, however, destruction gives place to inflammation, the sputum becomes more frankly purulent, and as healing occurs it diminishes in amount

During the earlier stages wasting is marked and rapid, and the accompanying cachexia causes a definite anæmia Fever is usually high



[illegible] occupies the greater part [illegible] was expectorated for [illegible] in the lung was [illegible]

[illegible] but little [illegible] when the abscess settles down into a state of chronicity the temperature is likely to be normal Rarely, and in some of the more fulminating cases of gangrene there may be no marked elevation of the temperature

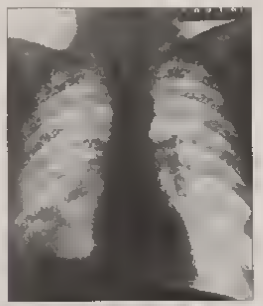
The x ray appearances of a pulmonary abscess are at first indistinguishable from those of gangrene a marked fluffiness being seen in the affected part Later, as the lung tissue breaks down and liquefies, a cavity in which there may be a fluid level, becomes apparent (fig 2) The development of fibrosis around the cavity results in a definitely recognizable thickening of its wall (fig 3)

Conservative or expectant treatment, on the lines already described, is

[illegible] surgery. Surgical treatment is withheld as long as possible, not only because many cases will recover spontaneously, but because premature interference, before an abscess has become stabilized and well encapsulated, is known from experience to lead to disaster.

Artificial pneumothorax has been recommended in the treatment of abscesses, but the danger of infecting the pleura is too great unless the abscess is situated close to the hilus. If the induction needle should prick an infected portion of the lung or if a cavity in the lung should burst into the pleura, then a serious empyema would certainly occur.

Once there is definite evidence of encapsulation—usually after a lapse of at least four to six weeks—and it is obvious that spontaneous resolution



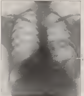
[illegible] of the right lung. [illegible] thick wall [illegible] Recovery [illegible] drainage, but [illegible]

is unlikely, the surgical [illegible] the abscess externally. Under suitable [illegible] the ribs are removed from the vicinity of the underlying [illegible] previously carefully localized. These rib resections need [illegible] in the convexity of the chest wall and so facilitate the subsequent obliteration of the abscess cavity by cicatrization. If it is ascertained that the lung is adherent to the chest wall, the abscess is opened by burning through the intervening lung tissue with the cautery which minimizes hæmorrhage and the risk of air embolism. If the pleural cavity is patent the parietal pleura is carefully stripped by blunt dissection from the chest wall and a mass of paraffin wax

[illegible] the pleura [illegible] intact and so encouraging their cohesion.

[illegible] weeks later, when the two layers of the pleura have [illegible], the wound is reopened, the wax removed, and the abscess [illegible] in the manner described. Occasionally, during this interval, either [illegible] may happen. The wax may act by compressing the abscess [illegible] to burst either into the bronchus, when its contents are [illegible] and spontaneous recovery follows, or it may burst into the bed of the [illegible] and so through the incision on to the surface. In the latter [illegible] removed and adequate drainage is automatically established.

[illegible] has been recommended for lung abscess, but the writer has [illegible] of the operation in this connection.



[illegible]

[illegible] is fatal [illegible] which little can be done. If [illegible] by adhesions, then the necrotic lung may [illegible] and separation hoped for. A few such cases recover, [illegible] patient survives the intense toxaemia there is great risk of [illegible] haemorrhage when the sloughs separate. When the pleural cavity is [illegible] by adhesions, the possibility of rapidly applying a ligature to the [illegible] amputating the necrotic lobe beyond it should be borne in mind.

*Solitary cysts*, of developmental origin, lined by epithelium resembling

[illegible] infection [illegible] infection [illegible] bronchi, infection is likely to persist in the cysts because as a rule they are inadequately drained. If the cyst communicates freely with a bronchus the continued expectoration of pus in quantum may lead to a diagnosis of bronchiectasis, with which the condition is occasionally associated, and the true nature of the condition only recognized after routine radiological investigations. If the bronchial communication is occluded or undergoes the pent-up purulent secretion may perforate into and infect the pleural cavity; many cases first come to the notice of the thoracic surgeon as empyemata which continue to discharge or reaccumulate (fig. 1). Unless the mucoid secretion from the bronchial epithelium is noticed or the cyst recognized radiologically—in this connection the necessity for repeated radiological examinations to detect a fugitive "fluid level" must be mentioned—the cyst is unlikely to be detected except by an exploratory operation. Some of these cysts obtain an accessible surface of the lung and may be dissected away satisfactorily, or the lining destroyed by cautery and the cavity obliterated by a plastic operation. In other cases it may be necessary to extirpate the portion of the lung containing them. If the general condition or the local technical difficulties contraindicate such radical treatment, it may be necessary to be content with establishing adequate drainage by means of a permanent external fistula or sinus.

## Bronchiectasis

The etiology and pathology of bronchiectasis is very imperfectly understood, and a great deal of confusion exists in the literature on the subject. Although denied by many pathologists, it seems reasonably certain on clinical grounds that many cases are of congenital origin, especially those characterized by saccular dilatations or large cystic cavities (fig. 2). These are closely related to the solitary bronchogenic cysts encountered in the mediastinum and in the lungs. Other cases are associated with pulmonary collapse, but it is not clear whether the collapse or the bronchiectatic change is primary, as the evidence is ambiguous. Occasionally only the lower lobe of a lung may be collapsed, yet both lobes may be equally bronchiectatic, and there is, on the other hand, positive evidence that bronchial dilatation may occur subsequently to collapse. Wrinkling of the bronchial wall following inflammations associated with the acute exanthemata, pneumonias, and even empyemata are all regarded as of etiological significance.

Whatever the type, bronchiectasis is characterized clinically by remissions, the cases being alternately wet and dry or dry and relatively well for varying periods. Some cases, especially the congenital cystic variety, may be free from symptoms and consequently undetected until some superadded infection occasionally late in life occurs; others run a course which is on the whole predominantly wet. Once a case has

been wet recurrence is likely and later these cases succumb to toxæmia spreading suppurative pneumonitis cerebral abscess, or meningitis There are no criteria by which it is possible to select those cases which are likely to do well from those which are likely to do badly, but experience suggests that extirpation offers the only prospect of cure for the victims of this disease and the best prospect of prolonged survival Those who recover from the operation are almost without exception completely relieved

Unilateral cases naturally, were amongst those for which extirpation was first employed The operation of lobectomy is now commonly practised for disease involving one lower lobe (fig 6) and, whereas the



Bronchiectasis The bronchi of the entire left lung having been opened in layers to be enormously dilated The condition is probably due to congenital atresia The patient has survived removal of the whole of the left lung

mortality of the operation a decade ago was as high as 60 per cent it is now probably in the vicinity of 20 per cent Sauerbruch has recorded a series of 24 cases with a mortality of only 10 per cent Dry cases should find the operation best of all and every possible means is adopted to ensure that sputum production is minimal at the time of operation Children stand the operation remarkably well and in the writer's series of eighteen cases under the age of 13 years treated by operation, in which a lower lobe was extirpated for bronchiectasis only two cases died one from undetected coincidental acute infection and the other from adherent pericarditis three months afterwards The youngest survivor was aged 3 years and 11 months at the time of operation Early adult life seems to

by a relatively dangerous age at which to undergo the operation, but it must a point presumably upon which further light will be thrown by increased experience. The writer has removed the whole lung for bronchiectasis involving the entire organ in seven cases, in five with success. In one of the two fatal cases a technique now properly discarded was employed and in the other an injury to the vagus nerve, now probably avoidable, occurred. These results and the experience of others, demonstrate that these operations are of great therapeutic value. It should be pointed out to the patients that for technical reasons it may be necessary to operate in stages.

Bilateral cases call for more serious consideration; patients have survived after removal of both lower lobes; hence when the disease is



Fig. 6.—Bronchiectasis. The lower lobe of the left lung has large dilated bronchi, all of which are demonstrated by lipiodol. A typical saccular bronchiectatic lobe, one of which has since been perfectly d

limited thereto cure is possible. In such cases, and even when the disease is more widespread, clinical, bronchoscopic, and other forms of observation frequently indicate that one lobe is predominantly affected, and its removal may give very marked relief.

Artificial pneumothorax, extra-pleural plugging with tampons or with paraffin wax, and thoracoplasty are all forms of collapse therapy which may be required on occasion to alleviate symptoms, but they are uncertain in their results and are never curative measures. They are of most use as a preliminary to extirpation or as a palliative operation where resection is unsuitable because of age, generalized disease, or other factors.

In congenital multicystic disease the secondary inflammatory changes, as seen macroscopically, are frequently limited to the lower lobe and often to its lower portion, presumably because once infection is established it

[illegible]ntively inadequately drained lower lobe Lower lob[illegible] [illegible]s may give complete symptomatic relief despite the presence [illegible] [illegible]ondition in the remaining upper lobe An empyema somet[illegible] [illegible]stinal abscess more rarely, may complicate bronchiectasis [illegible]satisfactorily treated by drainage in the usual manner A previous [illegible]n empyema is no contraindication to a proposed lobectomy [illegible] [illegible]ty the adhesions encountered in such cases although difficult [illegible]ly separable

CONCLUSION

[illegible] pulmonary suppuration requires consideration on its own [illegible] [illegible] will be difficulty in fitting many cases *exactly* into [illegible] of [illegible]scribed here indeed in actual practice it will be found [illegible] [illegible]ons are so closely related to one another that it is well [illegible] [illegible]hip to differentiate between some of them It is important to [illegible] [illegible] the scope of thoracic surgery has increased enormously [illegible] [illegible] surgical measures are only employed when it becomes [illegible] [illegible] further or complete recovery is unlikely without such help [illegible] [illegible]peration is usually not undertaken until the individual problem [illegible] [illegible]y considered by both the surgeon and the physician concerned [illegible] [illegible]unity is taken to urge practitioners to investigate completely [illegible] [illegible]ch there is prolonged cough or abnormal expectoration [illegible] [illegible]h resist the ordinary remedies In the limited space [illegible] [illegible] not been possible to do more than outline briefly the more [illegible] [illegible] facts of the subject, but it is hoped that enough has been said [illegible] [illegible]ssistance to those who are called upon to manage such cases [illegible] [illegible] case hitherto regarded as a hopeless chronic ' has, after investigation by the methods now available and an appropriate operation, been restored to active and often normal life

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## MENTAL TREATMENT ACT OF 1930 WITH APPLICATION TO SERVICE CASES[1]

By SURGEON REAR-ADMIRAL J TAYLOR HALL C.M.G. M.B. (Lond.) (Ret.)

I think it will interest you to have a short account of the treatment of Service mental patients in the past and the advantages that are now possible under the Mental Treatment Act of 1930

Luckily in the Services in peace time we have not many cases of insanity to deal with but when they do occur some of us may not know much about what will happen to them once they are invalided

On January 1, 1936, the Board of Control gave the figure 4,765 as the

[1] Being an address delivered before the United Services Section of the Royal Society of Medicine, published by kind permission of that Society

[illegible] Hospitals in England [illegible] Government War [illegible]

[illegible]

The [illegible] story of [illegible] and the old Bethlem Hospital [illegible] Wynne's Act in 1808 was [illegible] better treatment of lunatics. Many Acts [illegible] the passing of the 1890 Lunacy Act. This Act [illegible] and brought the others together [illegible] which with the rules of the Board of Control are now [illegible] certify cases.

The 1771 Act provided [illegible] as at the Royal College of Physicians to visit licensed private [illegible] but these visitors had no power to effect [illegible] In 1828 this Act was repealed and the Metropolitan [illegible] Lunacy commission, and they had the power to revoke [illegible] and discharge any persons who were improperly confined. Commissioners in Lunacy for England and Wales were first appointed in 1845 and their title was changed to Commissioners of the Board of Control in 1913.

Prior to having the three large Naval Hospitals at Haslar Plymouth and Chatham, of which Haslar is the oldest it was the custom to board out the naval sick in houses near these seaports and a similar plan appears to have been carried out with mental cases invalided about the beginning of the nineteenth century. Some of these cases were sent to what was called a Mad House situated in Hoxton.

I have here a report from a Committee appointed by the House of Commons in 1815 [1] whose instructions were "to consider the provision being made for the better regulation of Mad Houses in England." In the report there is a long account of the treatment of Naval Maniacs at a house in Hoxton. In this house there were 19, including 1 Captain, R.N., 4 Lieutenants R.N., 3 Marine Lieutenants, 1 Surgeon, 1 Purser, and the remainder were what we should now call Warrant Officers and in addition 130 seamen. The Commission found that the sitting rooms were very crowded and the sleeping accommodation disgraceful. Wet and dirty patients were sharing beds with clean patients and very few of these officers had a bedroom to themselves. Some of them were even sharing beds with pauper cases. There were no proper airing courts and the supervision was far from what it should have been. Physical illnesses appear to have received attention but little if any, was provided for the mental condition. The food is stated to have been very monotonous being mainly confined to beef and potatoes with no other vegetable, the bread was excellent, and the beer good.

The Chairman of this Committee reported that the conditions were so bad that he suggested that "on the principle of humanity it was expedient to erect a Lunatic Asylum in the vicinity of Haslar where it would be

directly under the control of the Naval Authorities and that each patient, officer or man should have a separate bedroom amongst other advantages"

This no doubt led to the use of the R N Hospital at Yarmouth as a Mental Hospital The history of this Hospital is very interesting It was built in 1811 to receive wounded from the Navy during the war with France but no naval wounded were ever sent there In 1815 it was used as military barracks but only by a few soldiers, and from 1844 for the next ten years as a military asylum In 1854 on the outbreak of the Crimean War the Admiralty reclaimed the building for the accommodation for wounded that might come from the Baltic, but none ever came, and again the Military had it as a convalescent hospital, but in 1863 it reverted to the Admiralty and has since been used for naval mental cases

The Hospital is built on the block system of which there are eight, of these two are reserved for officers with accommodation for 42 and the other blocks have room for a total of 216 cases, which could be considerably increased should that be necessary

Some time ago it was proposed to close Yarmouth but the Admiralty made a bold fight to retain it and the Yarmouth Naval Hospital Act was passed in 1931, which regularized the legal position of the Hospital and made provision for patients being received from the Ministry of Pensions, and in addition the admission of voluntary patients

At each of the principal Naval Hospitals there are separate blocks in which cases for observation for mental troubles are accommodated and as soon as an officer or rating is found unfit for further service he is invalided Then the question of his discharge has to be considered If an officer and he is certifiable under the Lunacy Acts he can be discharged to R N Hospital Yarmouth his County or Borough Mental Hospital Licenced House, Registered Hospital, or to private care In the case of a rating, if certifiable and the disability is attributable to the Service, or he has over twelve years' service, he is eligible for admission to R N Hospital, Yarmouth, otherwise he goes to his County or Borough Hospital Naturally his relatives are consulted about where they wish him to be discharged to

Such cases are discharged to R N Hospital Yarmouth, or to other mental hospitals on the certificate of two naval medical officers with the approval of the Secretary of the Admiralty

In the case of the Army and Air Force I understand that the routine is for their officers and ranks to be invalided at the Royal Victoria Hospital Netley and their discharge arranged for from there

*During the Great War*—The Navy was able to deal with their own cases and certifiable cases were certified The Military naturally had very many more cases to deal with owing to their much larger personnel, and special hospitals or portions of general hospitals were set aside for mental cases until eventually there were 2,358 beds reserved for neurasthenic, and 2,625 for mental cases [2]

In order that certification under the Lunacy Acts might be avoided in the treatment of soldiers suffering from certifiable mental disorder the military authorities decided that unless they recovered, their treatment should be maintained in hospitals under military control so long as the war lasted subsequently, however, to avoid congestion it was found necessary to limit the period to nine months

*Post-War*—The Ministry of Pensions retained some of these mental hospitals, but these were gradually closed as the numbers were reduced, the last one was at Kirkburton, and most of the cases were transferred to the R N Hospital Yarmouth Other cases had been sent to their County or Borough Mental Hospitals

Service patients are classified as private patients, and as such have special privileges such as having their own clothes getting 2s 6d per week pocket money, which, if they are unable to spend themselves is spent for them in getting little luxuries which they can appreciate

In addition to being seen by the Commissioners of the Board of Control at their annual visit to each Mental Hospital the Ministry of Pensions has a medical visitor appointed who visits and sees each ex Service case once a year and from my experience these visits are much appreciated as the men feel that they are not forgotten

I now come to the main point of my paper As you are all aware there is a strong feeling against certification if it can be avoided and for that reason the Mental Treatment Act of 1930 was passed Broadly the intention of this Act is to prevent the stigma of certification in cases which might be expected to recover with suitable treatment It deals with two main types of cases, viz Voluntary and temporary

The Act reads —

> Any person who is desirous of voluntarily submitting himself to treatment for mental illness, and who makes a written application for the purpose to the person in charge may without a reception order be received as a voluntary patient within the meaning of this Act, or in any hospital, nursing home or place approved for the purposes by the Board of Control or into the charge as a single patient of a person so approved and any approval under this section may be granted subject to such conditions as the Board think proper and may be revoked at any time"

The next section deals with patients under the age of 16 which is unlikely to be necessary in any of the Services

'Any person received as a voluntary patient under this section may leave the institution hospital home or place upon giving to the person in charge seventy-two hours notice in writing of his intention to do so, or if a person under the age of 16 upon such notice being given by his parent or guardian

Notice of the reception, death, and departure or discharge has to be given to the Board of Control within a statutory period

If any [illegible] incapable [illegible] unwilling [illegible] to receive treatment [illegible] is a voluntary patient [illegible] and shall, if he has not previously [illegible] on the expiration of twenty eight days from the date on which he became incapable of so expressing himself, in every case be discharged to deal with him either under principal Act as a person [illegible] under this Act as a person likely to benefit by temporary treatment

A Visiting Commissioner may at any time visit a person received as a voluntary patient under this Act or under the provision of any local Act and report to the Board of Control on the case

If the Board of Control are of opinion that the mental state of any such voluntary patient is such as to render him unfit to remain as a voluntary patient they may order the person in charge either to discharge the patient or to take steps to deal with him either under the principal Act as a person of unsound mind or under this Act as a person who is likely to benefit by temporary treatment

The majority of voluntary patients are easily classified as such but at our visits we sometimes meet peculiar cases One man I saw had to be told he could leave for two years before he completely recovered and was discharged He knew that if he gave seventy two hours notice in writing he could go and so complied with the regulation in the Act

When a voluntary patient has to be certified the Board of Control like if possible that the certification takes place somewhere else than where he has been living so that the patient may not think that he has been jockeyed into being a voluntary patient in order that he can then be certified, which is not an uncommon impression amongst patients

The second part of 1930 Act deals with Temporary Treatment without certification

> 'Subject to the provisions of this section, a person who is suffering from mental illness and is likely to benefit by temporary treatment but for the time being is incapable of expressing himself as willing or unwilling to receive such treatment may on a written application duly made in accordance with the provisions of this section but without a reception order be received as a temporary patient for the purpose of treatment (1) Into an institution maintained by a local authority, or (2) into a registered hospital or (3) into any such institution hospital or nursing home as may be approved by the Board of Control for the reception of such temporary patients or (4) with the consent of the Board of Control into charge as a single patient

The application for admission has to be made on a special form and signed by two registered medical practitioners of whom one shall be a medical practitioner (not being the usual medical attendant of the person to whom

[illegible] approved by the Board [illegible] under this section [illegible] in attendance [illegible] the patient separately [illegible]

[illegible] member that in the principal Act of 1890 [illegible] who sign the certificate must see the patient separately [illegible]

[illegible] medical certificate is only valid for three days after the [illegible]

A patient may be detained under this section for a period of [illegible] possible to have this period extended for twelve months by [illegible] medical certificates for three months each if it is considered [illegible] patient has a reasonable chance of recovery

The same rules hold good regarding admission discharge and [illegible] in the case of voluntary patients

Should a temporary patient recover his voluntary [illegible] for more than twenty eight days after that date but he can remain [illegible] voluntary patient

Every temporary patient must be visited within one month of [illegible] by members of a visiting committee or by a Commissioner in the [illegible] under their jurisdiction These are the main points connected with temporary patient

The best examples of suitable cases under this heading [illegible] themens, and puerperal cases but there are many other suitable types [illegible] majority of whom are of a senile type

As regards the Mental Treatment Act the Voluntary System [illegible] more likely one to be of use for Service cases An officer recently invalided [illegible] at Netley has gone as a voluntary patient and there has been [illegible] at Yarmouth but up to date I have not heard of any rank or rating having availed himself of this form of treatment When the Act gets better known I feel sure more use will be made of it I will have more to say about this under the next heading

The Act ordains that the word Asylum be replaced by the words Mental Hospital lunatic by a person of unsound mind and pauper by a rate aided person

In addition Sec 16 also removes the likelihood of a legal action being brought against the medical practitioner who signs the certificate unless he has acted in bad faith or without reasonable care

In civil life many cases are sent to the Public Assistance Institutions for certification as the local practitioner will not take the responsibility of doing so in case legal action be taken against him This clause has been a long-felt want in previous Acts

*Present Day*—In the Report of the Royal Commission on Lunacy and Mental Disorder par 42, there is this apt statement "The keynote in the past has been detention, the keynote of the future should be prevention and treatment

The modern mental hospital is a much more interesting place than it used to be when little attention was paid to the cure of the patients who could be seen sitting about taking little interest in themselves or in what was going on around them The men if fit did a little farm or garden work whilst the women did ward, laundry, sewing or mending work Nowadays the mental hospital is a hive of activity In addition to the individual attention paid to the patient by the medical officer with a view to his cure if possible or to the alleviation of symptoms there are work rooms preferably called occupation rooms or centres where all sorts of handicraft work such as rug making, carpentry chair caning can be carried out under suitably trained attendants or nurses Handicraft work can also be done in the wards by patients who for one reason or another are unable to attend the occupation centre For those unacquainted with mental hospitals the change in the atmosphere from the old days can hardly be imagined This change is undoubtedly due to a very great extent to the introduction of Occupational Therapy as it is called Many cases of the destructive type especially those who tore their clothes, now that their energy has been diverted into more useful directions, have become almost model patients

It must be definitely understood that occupational therapy is run as part of the treatment and not for the money that can be made out of the sale of the articles produced

In the Naval Medical Journal 1936 there is a very interesting article by Surgeon Commander McDowel [3] giving a description of how it is carried out at Yarmouth At a visit there I found both officers and men very keen on their handicraft work, and some of them told me how much better they were since they had started doing it The hours of work should be short and the work made interesting, so that it does not become monotonous, if this is done under medical direction the improvement that in many patients show is surprising Under this therapy is also included recreational and social work

The time spent by most patients at invaliding centres is usually short but even there it is useful and helpful if the medical officer advises the patient to do some simple form of handicraft such as knitting scarves, mat making, &c I was pleased to see this was being done at Netley, in addition to games both indoor and outdoor as in most of these cases the worst possible thing is for the patient to have nothing to do

No modern mental hospital is now complete without its admission block to which new cases are admitted and kept under observation and treatment before possibly being sent to the wards in the main block This is a very great advantage as you can easily understand how upset a patient may be when admitted from a quiet home to a large ward with possibly noisy patients in it Many, if not most of the voluntary patients are treated in the admission wards and need never go to any of the others

Most of the mental hospitals have an out patient clinic run in connection with them by one or more of the medical staff At it advice is given which

[redacted] of the patient going into [redacted] he [redacted] he [redacted] under treatment by [redacted] doctor he saw at the clinic. These clinics provide the majority of the voluntary patients. I strongly advise that all Service cases invalided for mental trouble which is not sufficient to need certification should on discharge be advised to visit the out-patient mental clinic of the nearest mental hospital or general hospital to their home so that treatment can be continued which could not be done in the Service once the man has become unfit for active service.

The specialists at invading centres no doubt consider what is best for the patient but I feel sure it would be helpful to medical officers who have to deal with mental cases prior to their invaliding, if they were able to tell the patient that there is such a thing as the Mental Treatment Act which would allow, in suitable cases, further time to complete their cure without the stigma of certification.

Relatives of the patient are always glad to know of a possible means of treatment which will avoid certification.

From the clinic he may be recommended admission as a voluntary patient and advice given as to how this can be done as a rate-aided patient.

It has been found that the main supply of voluntary patients are admitted through the clinic.

Most mental hospitals run cricket and football teams in which some of the patients play with the staff; dances are held frequently and are very popular. Cinema performances are usually given in the recreation hall weekly in winter and are well attended. There is usually a canteen where little luxuries can be purchased so you see life in a mental hospital is not as monotonous as it might be thought to be.

The diet is also very good and well varied usually on a four weekly scheme so that the patients never know what they may have at any meal. Most hospitals are able to grow their own potatoes and vegetables, and many have their own orchards.

The Mental Treatment Act is fulfilling its purpose well. In 1931 when it came into force, in round figures, 7 per cent. of cases were admitted as voluntary patients; last year the percentage was twenty-four or nearly one quarter of the total admissions.

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[illegible] the medical journals [illegible] is forced [illegible] reliance of original articles on the [illegible] emanating from naval sources. Most of these however, have been [illegible] clinical and therapeutical point of view and at this stage a historical [illegible] of the subject might be of interest

[illegible] the various conditions caused by fungi one concern lies chiefly with infections of the crural and interdigital folds and especially the latter. Whether we are becoming more 'fungus conscious' as Gray [1] tried to make us do or whether the condition is becoming more common as the great mass of American evidence would lead us to believe, is another matter. At present we are not in a position to say until a mass of clinical evidence supported by laboratory findings is available. It is hoped to publish some statistics on this subject in the near future.

The study of fungi is as old as that of botany but it was not until the nineteenth century in France that clinical mycology became recognized although there are several mentions of parasitic moulds before that time.

The royal botanist Hooke [2] in 1680 noted a parasitic fungus which caused discoloration on rose leaves, and shortly afterwards Malpighi wrote of vegetable parasites, "plants which grow on other plants as he called them. Then in 1792 Micheli described the genus Aspergillus and twenty three years later the botanist Linnæus in his "Species Plantarum collected and tabulated all the available knowledge of the fungi.

It was not till 1839 however, that Langenbeck discovered the first parasitic fungus of man that of thrush and in the same year Schönlein discovered favus. It is interesting to note that two years previously Remak had noticed mycelial filaments in favus but regarded them as secondary implantations. The next step was the discovery of ringworm in 1841 by Gruby. He described three ringworm fungi associated with as many types of lesion. Unfortunately he caused considerable confusion by his clinical descriptions in which he mistakenly included typical examples of alopecia areata as cases of tinea. Naturally other observers failed to find fungi in alopecia and his work fell into disrepute. Sabouraud later confirmed his findings and acknowledged the priority of his discovery. Four years after Gruby's publication Malmsten found a fungus in ringworm which he called a trichophyton and the name trichophytosis was given to the condition it caused.

So far the study of ringworm had been limited to the scalp and beard regions and the first departure was made by Devergie [3] in 1857 when he described eczema marginatum as a form of herpes circinate. Hebra [4] in 1860 gave a classical description of the condition, and what is extremely

[illegible] The causal fungus [illegible] years later by [illegible] he isolated fungal elements from eczema marginatum and [illegible] specificity by reproducing the disease experimentally

The first mention of ringworm of the feet as a separate entity was made by Monkhar [6] in 1874 when he found fungi in dermatitis of the soles of the feet He followed Remak's error how ever and regarded the filaments as secondary contaminants with the result that his observation passed unnoticed Some time before this in 1868 Tingale [7] claims that Pellvari described ringworm as producing eczema of the feet Thereafter with the rapid and spectacular advance of bacteriology and the more exact methods of culture and identification, mycology fell somewhat into disrepute

It was not till 1908 that the next step of importance was made In that year Whitfield [8] found fungi in six cases of vesicular and scaly eczema between the toes This was the result of routine microscopic examination of all such cases in his practise Two years later Sabouraud [9] showed *Epidermophyton inguinale* by culture in hand and foot lesions and in 1911 at a meeting of the Royal Society of Medicine he and Whitfield presented papers on Ringworm of the Feet, which drew universal attention to the condition

From that time an increasing amount of confirmatory evidence has been forthcoming although many important modifications have taken place

In his original writings Sabouraud laid down that —

(*a*) A given fungus always produces a constant clinical picture

(*b*) Eczema marginatum is always due to *Epidermophyton inguinale* as are most foot lesions

(*c*) A given fungus grown on his proof medium would always appear the same

Ormsby and Mitchell [10] and Rosenbaum [11] have since shown that the same fungus may cause a variety of lesions and that various fungi may cause identical lesions Wadham [12 13], Dubbe [14] Kittredge [15] Kurotchkin and Chen [16] and Ota [17], have practically reversed the position with regard to the incidence of *Epidermophyton inguinale* in foot cases, although a lot seems to depend on locality Kurotchkin thinks *E. inguinale* the commonest cause of tinea pedis in Europe while Reiss of Shanghai finds a trichophyton the almost invariable offender

The third postulate still holds good although the question was hotly disputed for some time In his original medium Sabouraud used crude maltose (Chanut), but the factory for its manufacture was closed in 1896 [18]—although small quantities continued to appear on the market long after this [19] Substitute media were accordingly used with the result that the widest cultural variations occurred The position has now been

universally cleared by the standardization of growth on local media against original cultures obtained chiefly from Sabouraud

So prevalent has foot ringworm become in America that in 1930 it was ranked by the dermatologists of that country [20] as the commonest skin disease far outstripping its nearest rival It is said to have been brought to the United States by returning soldiers after the Great War Gray [21] of London considers it was introduced to Great Britain by returning Anglo-Indians

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## THE TREATMENT OF RODENT ULCER BY RADIUM

LIEUTENANT-COMMANDER EDWARD MELLISH, D.S.O., R.N.

Rodent ulcer is uncommon in the Royal Navy for although it occurs largely with a young seaman being favoured by exposure to wind and sun it rarely becomes evident before the age of 50 Actually only two or three cases are reported each year

It is therefore with some diffidence that this contribution is offered to the Journal, especially as no radium is available in the Service The writer however, has been encouraged to believe that a short article dealing with the use of radium may be of some interest The subject of rodent ulcer serves well to illustrate certain basic principles of radium treatment

### I.—Symptomatology

*Age.*—Basal celled epitheliomata usually occur in patients over 50 years of age In 200 cases studied, the ages when the patient first came under observation varied from 33 to 83 the average age being 63½ years

However the disease not infrequently occurs in [illegible] people. An advanced deeply penetrating rodent ulcer which [illegible] in the case of 16 years has come under the writer's observation.

*Site.*—In 200 cases studied, 98 per cent. of lesions occurred on the face and of these, only about 7 per cent. were within the area of skin which a man normally shaves. The following table gives a more precise analysis of the 200 cases:

| | Site | Number of cases | Total of 200 |
|---|---|---|---|
| *Face* | Nose | 52 | |
| | Malar and maxillary region | 41 | |
| | Inner canthus of eye | 18 | |
| | Eyelids | 17 | |
| | Forehead | 16 | |
| | Temporal region | 15 | 196 cases = 98 per cent. |
| | Ear | 13 | |
| | Chin | 8 | |
| | Lips | 6 | |
| | Outer canthus | 3 | |
| *Upper limb* | Back of hand | 1 | |
| *Trunk* | Abdomen | 1 | |
| | Back | 1 | |
| | Groin | 1 | |
| | | 200 cases | |

Clinical Types.—The earliest manifestation of rodent ulcer is a small flattened nodule lying in the skin with the epidermis stretched over it, giving it a whitish, somewhat translucent, pearly appearance. It is firm in consistency, painless and not tender. It progresses slowly, often remaining in the same state for many months or even years.

Sooner or later however, the nodule grows and one of the three following types of rodent ulcer is evolved:

(1) *Superficial Flattened Cicatrising Type.*—In this form similar nodules appear around the original lesion, separated from it by a narrow interval of skin. As growth continues these nodules coalesce forming a more homogeneous plaque. The centre of this plaque soon ulcerates superficially, while fresh nodules appear at the periphery, giving the ulcer a somewhat rolled edge. Following this, the central ulceration cicatrizes while the edge breaks down. To this peculiarity the type owes its name.

This form is painless and glandular metastases do not occur.

(2) *Hypertrophic Forms.*—These tumours are distinguished by an exuberant proliferation in various degrees. The epithelioma is usually rounded. The consistency is firm without being hard. The surface may be thickly covered with horny material, or there may be only a thin layer of cornification fissured in places or perhaps the surface is covered with a sero sanguinous scab. In other cases the growth is covered with reddened oozing skin which is slowly ulcerating in places. The pearly nodules already described may be seen at the periphery or within the tumour.

Eventually the growth bursts through the epidermis and being no longer circumscribed adopts a freer mode of growth forming a cauliflower

mass It then appears as a [illegible]ing mass, red and oozing, subject to hæmorrhages and generally [illegible] or infected in part Often however, when the tumour ceases to be covered with skin the main mass of the tumour becomes necrotic and this ulcerated form results

These different types of the basal celled epitheliomata have however these characteristics in common—lack of hardness of consistency, nodules on the deeper structures and slow progress These points, together with the absence of [illegible]ve to distinguish them from the squamous celled epitheliomata Sometimes these tumours become secondarily infiltrating and truly malignant When this transition occurs the tumour grows extremely rapidly loses its mobility and ulcerates, becoming hollowed out Pain appears and the lymph nodes soon enlarge The prognosis is then very [illegible]

(3) *Ulcerated Forms*—(a) The alternately ulcerated and crusted variety is commonly seen and is the form most often described in the textbooks Typically it is presented by a flattened crusted plaque of variable size and irregular outline. The removal of the crust exposes an ulcer with thickened raised rolled edges which represents the remains of the hypertrophic plaque from which the lesion originated The base is reddish with a purulent or serous sanguinous exudate the solidification of which leads to the formation of a new crust The lesion is mobile on the subjacent tissues and progresses slowly

(b) The deeply ulcerative variety may result from any of the preceding types It occurs mainly in old patients with little power of resistance In appearance it is quite characteristic The edges are clean cut and punched out not thickened nor rolled These edges limit a smooth cavity which may be red or simply rosy not oozing and having a peculiar glazed appearance Its progress is very slow and sometimes cicatrization occurs in parts, only to be followed by fresh ulceration Little by little however, the ulcer loses its mobility as it invades and destroys the underlying tissues After some time bone or cartilage is invaded and laid bare The ulcer continues to advance perhaps into the orbit the nasal cavity or the mouth Sometimes the dura mater is invaded and the brain exposed When mucous membrane is attacked it is found that the ulcer extends much more rapidly Owing to the absence of metastases, extensive destruction may occur without seriously affecting the general health of the patient Ultimately death occurs from hæmorrhage or septic complications Occasionally the ulcer becomes truly malignant and death occurs from secondary deposits

## II—Radio Activity

### (a) *The Elementary Physics of Radium*

An elementary knowledge of the physical properties of radium is an essential preliminary to the rational use of this substance for therapeutical purposes

Radium belongs to a group of substances called radio-active These

substance all p[illegible] of instability of th[illegible] with the n[illegible] articles an[illegible] at great sp[illegible] of two kinds th[illegible] which are p[illegible] th[illegible] charged This n[illegible] gamma rays which are n[illegible] but ether w[illegible] These gamma rays are of a mixture as th[illegible] deep *x* ray therapy appar[illegible] with a shor[illegible] correspondingly greater penetrating power.

*Alpha rays* are of no therapeutic use as they are absorbed at 0·01 mm from the surface of the skin or even by a thin piece of writing paper

*Beta rays* vary in their velocity and penetrating p[illegible] roughly classified as soft medium and hard The v[illegible] power is greatest in the case of the hard variety and [illegible] These rays are used only for superficial lesions as they [illegible] 6 per cent by their passage through [illegible] non-selective affecting normal and malignant [illegible] degrees

The nature of the action is destructive or caustic the [illegible] 'radium burn' A radium burn resembles an ordinary burn [illegible] similar degrees can be recognized according to the dose It differs from an ordinary burn in the following respects —

(1) The various degrees of burn appear in an orderly sequence [illegible] erythema then vesication followed by ulceration at first superficial [illegible] if the exposure has been sufficiently prolonged deep ulceration The final stage is manifest only after an interval of two to three weeks

(2) During healing a limpet shell crust appears beneath which healing takes place

(3) The resulting scar is more soft and supple than that resulting from an ordinary burn This is due to an unusual number of elastic fibres in the scar tissue

*Gamma rays* are very penetrating and are never completely absorbed by the body They are therefore suitable for the treatment of deeply situated lesions

Their effect upon living cells shows three distinct phases (*a*) increase in cell activity (*b*) arrest of cell activity (*c*) degeneration and destruction of the cell providing irradiation is continued for a sufficient time

All cells do not respond equally Malignant cells undergo the three phases more readily than the normal cells from which they originate Hence the gamma rays are said to have a selective action on malignant tissue Different types of growth respond in different degrees Thus for example the cells of carcinoma of the tongue are more radio-sensitive than those of carcinoma of the rectum, the hypertrophic forms of basal cell epithelioma respond more favourably than the ulcerative types All cells

are more vulnerable when in a state of active division For this reason, tumours of rapid growth respond more quickly and completely than those of the slowly growing scirrhotic type

*Filtration* —Owing to the different penetrating powers of the various rays, the least penetrating can be absorbed by the interposition of screening agents A light screen such as rubber sheeting, will absorb the alpha rays and the softest beta rays, a heavy screen, such as 1 mm of platinum will absorb practically all rays except those of the gamma variety

*Secondary Radiation* —The passage of gamma rays through metal screens gives rise to this production of secondarily excited rays which are of the soft beta type and capable of causing considerable surface irritation or even ulceration For this reason it is generally necessary to absorb them by some non-metallic screen such as sheets of black paper and rubber sheeting

*The Effect of Distance* —The intensity of the irradiation varies inversely with the square of the distance from the radio active source absorption being neglected Hence the effect of increasing the distance of the radio sensitive focus from the lesion is to make the irradiation weaker but more uniform in its intensity at the various points of the lesion One of the functions of Columbia paste plaques separating the radium from the skin is to produce a more homogeneous dose throughout the lesion

*Radon* —The first disintegration product of radium is radon or radium emanation This is a true gas and in a closed space maintains an equilibrium with the radium element which produces it The amount of radon in equilibrium with 1 milligramme of radium is termed a millicurie and produces the same intensity of irradiation as 1 milligramme of radium The rate of decay in radium is such that its radio activity falls to a half in 1 700 years Radon loses its activity much more quickly, in 3 85 days a half is lost For this reason exhausted radon seeds can be left in the body without fear of ill effects other than those of any similar foreign body

### (*b*) *The Fundamental Principles of Radium Therapy*

Since the first effect of radium is to increase cell activity it is advisable to give, if possible, an adequate dose at the first exposure Furthermore if an insufficient dose has been given the cells of the tumour may become less radio sensitive The process is termed "radio vaccination"

For the same reason it is necessary to give a homogeneous dose to all parts of the tumour or some part may receive an insufficient dose which fails to cause destruction and may even encourage the cells to greater activity and increased radio resistance To obtain a uniform radiation, "surgery of access" is frequently employed Correct screening distance and the utilization of "cross-fire" are factors of great importance

The ideal dose is that which produces destruction of the pathological cells with little destruction, or even stimulation of the remaining normal

well The [illegible] it to determine, especially [illegible] types of growth such as carcinoma of the rectum where there is the difficulty between the sensitivity of normal and abnormal tissues

The duration of exposure is at present largely determined on empirical grounds but recently certain continental radium workers have endeavoured to assess this more accurately by a study of histological sections Realizing that the cell is more vulnerable while in a state of nuclear division they aim at estimating the length of time necessary for all the cells of the tumour to pass through this stage. They maintain that this is the optimum duration of exposure and can be decided by a consideration of the degree of mitosis shown in a section obtained by biopsy So far these experiments have met with little success

III —TREATMENT

In the treatment of basal celled epithelioma the operator must constantly bear in mind the properties of radium and their relation to the type of filter he proposes to use He must also visualize the pathological condition in each individual case and by a judicious correlation of the two determine the amount of filtration required to affect the tissue well beyond the limits of the growth It will, therefore be found advantageous to discuss the treatment by considering certain clinical types of cases

*Small Basal celled Epithelioma*

In the early stages basal celled epithelioma is represented by a small, somewhat translucent plaque which bleeds easily on slight trauma and recovers with the formation of a scab Such lesions can always be cured by radium Excision is equally effective but owing to the difficulty of excising even a small growth from the situations most commonly affected, the danger of implantation cancer and the greatly inferior results, radium is to be preferred

The lesions are so readily accessible that one of the greatest difficulties is removed at the start External radiation by means of an unscreened full strength applicator is the method of choice This apparatus is a solid plaque containing 5 mg of radium element per square centimetre The whole apparatus is covered with thin rubber tissue to prevent contamination by secretion All crusts and scabs must first be removed It is wise to protect the surrounding skin by rubber-covered lead sheeting in which a hole has been cut corresponding in shape to the lesion but a little larger so that all outlying groups of cells may be treated The apparatus should be applied for one to one and a half hours according to the thickness of the lesion

The applicator emits a strong intensity of beta rays which are sufficiently penetrating to reach all parts of the tumour As a result of this beta radiation an inflammatory reaction is noticed in about ten days reaching its height at about three weeks Over this inflamed area, which

[illegible]

*Superficial Cancroid*

This variety should be treated in the same way as unscreened radium plaques. It is necessary to irradiate a small epithelial distance beyond the visible margin of the growth as outlying cells may undoubtedly be present in these cases. The time factor is small on account of the depth of the lesion. An exposure of one and a half hours is usually sufficient but it may be necessary to prolong treatment to two hours.

Diagnosis must be guarded as these lesions show a strong tendency to recurrence most commonly at the edge of the scar area. A second application will probably be necessary but this should not take place within six weeks of the previous dose, as the full therapeutic effect is not seen for this time.

*Hypertrophic Types*

These tumours are most variable in appearance. They may be smooth cauliflower sessile or somewhat pedunculated slightly raised above the skin or boldly exuberant. Treatment must be varied to suit each individual case. It is particularly important in these cases to adopt a technique which will result in a homogeneous distribution of rays to all parts of the particular tumour under consideration. Should one part of the tumour receive an inadequate radiation malignant cells at this point may be stimulated to increased activity. The method of "cross fire" or "radium barrage" aims at an equal distribution of the dose so as to avoid the stimulating action which may be produced at the limit of the zone of action. The diversity of clinical aspects makes it necessary to describe the technique with regard to several case types.

(*a*) *Small hypertrophic growths* extending only a little beyond the surface (up to about 1 cm.) and mobile on the underlying structures, should also be treated by surface application. Unscreened full strength applicators may be employed in the manner described, but for a longer period from one and a half to two and a half hours.

(*b*) *Larger hypertrophic growths* in which the thickness of the mass is more than 1 cm. must be treated by other methods so as to obtain a homogeneous dose. By the use of a light screen such as 0·2 mm. of lead, the less penetrating rays, which act only near the surface are absorbed, leaving a more penetrating more homogeneous but weaker radiation which must be employed for a correspondingly longer time. The full strength applicators should be filtered with 0·2 to 0·5 mm. of lead and applied for six to twelve hours according to the thickness of the lesion.

(*c*) *Large sessile tumours* are treated by a variety of methods. Success has frequently followed the repeated use of unscreened applicators. These act by attacking the more superficial parts of the tumour first. The beta rays



Ca[illegible] [illegible]etropi[illegible] [illegible]ri[illegible]



Fa[illegible]i[illegible]lle[illegible]m[illegible]list[illegible]

causing [illegible] action A fresh application can then act upon the exposed [illegible] tissues On general principles the techniques must be condemned [illegible] irradiation is far from homogeneous and the repeated exposure [illegible] considerable degree of radio vaccination

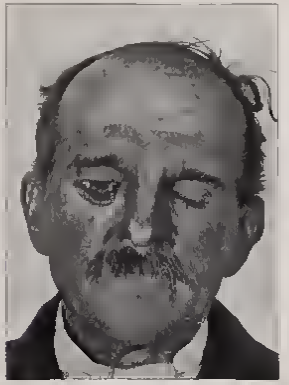
With screened applicators a more homogeneous dose may be given but probably the most useful procedure is to employ needles buried in and around the growth The needles most commonly employed have walls of 0 5 mm of platinum and contain 1 mg of radium per centimetre of length As a rough guide to technique, it may be stated that no part of the growth should be further than 1 cm from a source of irradiation but it should be remembered that larger doses should be placed at the periphery in order to obtain a homogeneous distribution If needles were placed at the same distance throughout the growth, the centre, being irradiated by its own foci, as well as those adjacent would be exposed to a greater dose than the periphery Various modifications of the technique are employed with equally good results Some authorities, such as Degrais prefer a comparatively large dose for a short time Other radiologists, including Regaud working on microscopical evidence obtained by biopsy frequently advocate exposures for five to ten days, and sometimes even as long as thirty days Degrais never advises a longer time than seventy two hours So radiosensitive are these tumours that equally satisfactory results are obtained by either method It is the rule to obtain complete cure even with advanced cases, provided that they are of the purely hypertrophic type Incidentally, this type of tumour also responds well to *x* ray treatment but radium is to be preferred owing to the difficulty of measuring the exact *x*-ray dose Given equally good results with several forms of technique, it is better to adopt the method which requires the least time for its operation, thereby affecting economy in hospital beds and avoiding the debilitating effects of prolonged periods of confinement to bed

(*d*) *In the case of large semi-pedunculated masses*, time and radium will be saved if the bases is first divided with the cautery The remaining growth can then be treated with external plaques

*Ulcerated Forms*

The two previous forms of basal celled epithelioma usually remain limited to the surface Unfortunately this is not so with the ulcerating forms The ulcer may however, reach considerable size on the surface, destroying only the skin and the subcutaneous tissue or it may tend to avoid surface spread and extend deeply to reach the underlying periosteum or perichondrium It is generally agreed that radium is much less efficacious once the bone or cartilage has been invaded It then becomes of the utmost importance in prognosis to estimate the mobility of the ulcer on the deeper structures For the same reason, ulcers in certain situations such as the forehead, ear and orbital margin, particularly at the internal angle of the eye, have an unfavourable prognosis because of the immediate neighbourhood of bone or cartilage

(*a*) *The Small Epithelioma Alternately Ulcerating and Crusting (Epithelioma Ulcero crotens)*.—These lesions are at the beginning small hypertrophic growths which have ulcerated superficially at the centre leaving the remainder of the growth as a rolled ridge. Their treatment is similar to that of the hypertrophic growths from which they originate. In the case of small ulcers which are very mobile on the deeper structures, the unscreened applicators should be used for one and a quarter to two hours. A cure is almost always obtained.

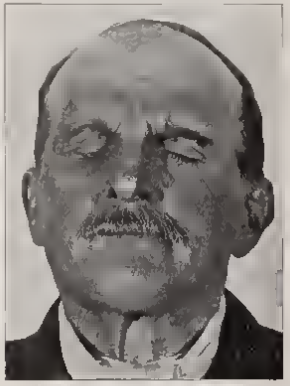


Case of extensive Epithelioma of the face treated by radium.

(*b*) *Ulcerated Epithelioma of Large Superficial Dimensions but not Spreading Deeply*.—These lesions must be treated with great care. Beta radiation with unscreened radium should be avoided since it is unwise to employ any measure which will increase the ulceration. Repair is always slow and often imperfect and if the screened beta rays has been given a painful, intractable, though benign ulcer may result.

Screened radium must, therefore, be used. There are various methods of technique. In France a frequent mode of treatment is by tubes of 8 to 15 mg. of radium, screened with 0·5 mm. of platinum. These are introduced into cork muffs of 2 to 4 mm. thickness and are placed in apposition all over the lesion and some way beyond it. These muffs

absorb the secondary radiations and have the effect of producing a more homogenous radiation by the distance which they impose between the radio active source and the tissues The tubes should not all have the same radium content If this were so the centre of the lesion being irradiated by its own foci as well as those in the neighbourhood, would be subjected to a greater dose than the periphery It is, therefore, necessary to use foci of less intensity in the centre so as to obtain as homogenous a radiation as possible With this technique the duration of the application should be about one hundred and twenty hours



La[illegible] three months after [illegible]

In England a more usual method of obtaining distance is by the use of Columbia paste plaques moulded on to the surface of the ulcer Lead rubber is then applied to the outside of the plaque Similar doses and times are employed

An alternative plan is to embed needles of radium or radon seeds screened with 0 5 mm of platinum into the edges and base of the ulcer For reasons already noted a greater concentration of radium should be placed at the periphery than at the centre

The results in this class of ulcer are not as good as in the former types About half the cases treated become healed but many cases show little or

[illegible] treatment [illegible] two weeks [illegible] with the [illegible] and subsequent [illegible]

[illegible] Variety of [illegible] epithelioma [illegible] resistance to the [illegible] the cases [illegible] of gamma radiation [illegible] the [illegible] must be avoided. Following [illegible] the treatment of squamous-celled epithelioma by [illegible] prolonged periods of two to three weeks [illegible] for this form of rodent ulcer. The result [illegible] frequently disastrous. For although the [illegible] the rays have more chance of finding the [illegible] their greatest fragility, it is no less certain that the cell [illegible] tissue are also affected adversely. The prolonged [illegible] the normal cells and those already debilitated by the nearness of the [illegible] neoplasm, or by the concomitant infection, may result in a [illegible] of the most alarming magnitude.

It is therefore preferable, in order to avoid the disadvantages of prolonged exposure on the one hand or insufficient screenage on the other, to employ large amounts of radium screened by 2 mm. of lead [illegible] for a short period. Of course means must be employed to [illegible] secondary radiations and sometimes this is advantageously accomplished by the interposition of Columbia paste, a measure which also provides a more homogeneous dose by the distance which is created between the radium and the lesion. With this technique the duration of the treatment should not exceed forty-eight hours. By this means it is possible to respect the integrity of the supporting tissue, a consideration of prime importance.

Although of course it is desirable to destroy all the neoplastic cells to avoid recurrence, this should never be effected at the expense of the tissues, also the adjacent tissues necessary for repair and cicatrization. It is a difficult problem to solve and frequently in this form of disease it is impossible to conciliate these two desiderata.

Such are the lines along which the deeply ulcerative type should be treated when the lesion is limited to the soft tissues. If however bone or cartilage have been invaded, an even shorter exposure will be advisable, these structures especially when devitalized by the neoplasm having a great tendency to radium necrosis. In some cases the bone or cartilage may be actually screened with rubber covered lead sheeting. Whenever possible however these tissues should be removed by surgical means before radium is employed.

Frequently this type of ulcer has been treated unsuccessfully by other means. Perhaps repeated cauterizations have resulted in much [illegible]

[illegible] of the neoplastic cells It is in these cases that long applications of intensity may be usefully employed Small amounts of radium [illegible] employed heavily screened for a duration of four to six days Intense treatments of this kind produce an avascularity of the tissues [illegible] them more susceptible than ever to radium necrosis For this reason radium should never be employed within six weeks of any previous treatment

The deeply penetrating variety of rodent ulcer is the most difficult type to treat It is exceptional to obtain a complete and lasting cure but most cases show improvement with temporary arrest of the disease Whenever the disease can be completely eradicated by surgery this course should be advised Unfortunately, in most instances this is only possible at the risk of subjecting the patient to an extensive and mutilating operation a procedure that is unwelcome to both surgeon and patient Accordingly radium is the form of treatment most generally suitable for these cases

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## EXTRACTS FROM OBSERVATIONS ON THE SCURVY, 1792
## BY THOMAS TROTTER M D

(*Surgeon of H M S The Duke*)

COMMUNICATED BY SURGEON LIEUTENANT COMMANDER S HANKINSON R N

ABOUT the beginning of June 1783 the *Guinea Man* of which I was Surgeon sailed from the Port of Liverpool After a favourable passage of little more than a month we came to anchor at Cape La How on the Gold Coast having buried a sailor who died of the small pox a dangerous distemper in a slave ship, but by taking proper precautions and throwing everything overboard which belonged to him the infection only extended to one black man a passenger who was confined in the long boat till he recovered No ship had opened trade here since the conclusions of the war so that in the space of a week we had bought more than an hundred prime slaves young stout, and healthy This was thought a lucky beginning but when we came to Anamaboe, the trade was scarce and the price of slaves very high, from the number of vessels then lying in the road which were eight or ten

About this time it was remarked, that the slaves bought at Cape La How, were growing exceedingly fat On this account it was recommended to the Master of the Ship to allow them more exercise and reduce the quantity of diet which had hitherto been too much from a mistaken notion that it would strengthen them the more to bear the passage to the West Indies Their food consisted of beans, which were brought from England and rice and Indian corn which were bought on the Coast These articles

[illegible] to drink what was [illegible] sixteen hours out [illegible] twenty hours, and [illegible] when upon deck, it was easy to foresee that they [illegible] in a healthy state. Such however was the obstinate and deceived ignorance of the Master of the Vessel that this treatment was still persisted in. The food was continued in the same proportion. [illegible] would have thought that some of them with much difficulty could [illegible] along the deck. And though a certain number might have [illegible] without endangering the safety of the ship it was not [illegible]. The custom of dancing them round the deck to the sound of the drum was not practised till it was too late to be of service.

It will be proper to observe here that these poor wretches are shackled in pairs by the wrists and ankles, which when they come upon deck two long chains are passed through their arms at the ankle *bar*, which reach from the forecastle to the barricade for the purpose of confining them to one spot. The rooms where they are secured below are from five to six feet in height according to the size of the ship, but besides the number that lie on the deck, about one half as many are stretched on what they call a platform that runs along the sides of the vessel, raised about two feet and a half from the floor and a breadth sufficient for the length of a man. Here they are stowed, spoonways according to the technical phrase, and so closely locked into one another's arms that it is difficult to move without treading upon them. The rooms are imperfectly aired by gratings above, and small scuttles in the sides of the ship, which, of course, can be of little use at sea. The gratings are also half covered when it blows hard to keep out the salt spray or rain. The temperature in these apartments when they became crowded was sometimes about 96 degrees of Fahrenheit's scale. A misfortune befell my thermometer in the latter part of the voyage, so that I had not an opportunity of measuring the heat when the rooms were as full as they could hold. I myself could never breathe there unless under the hatchway. In such situations it may be supposed that the sufferings of these creatures are sometimes dreadful. Air heated and rarefied to such a degree, and loaded with animal effluvia cannot fail of being noxious to life. There were certainly instances where some expired from suffocation having shown no previous signs of indisposition. During the season of the year, that the ship was on the coast there was little rain, and the weather was not more sultry than usual in these latitudes.

In this situation things remained with us, till the beginning of March, no precautions being taken to preserve the health of the slaves, when a corpulent young Negro complained to me of a hardness in the supinator

[illegible] longus of [illegible] [illegible] hardness appeared of a very unusual kind for it did [illegible] impression of the finger or [illegible] which I applied [illegible] It was directed some stupids [illegible] with [illegible] the [illegible] day I found the hardness extend to all the [illegible] the upper parts of the fore arm with some contraction at the [illegible] elbow, and rigidity of the tendinous aponeuroses of the [illegible] cubit None of these parts, however, were very painful or the [illegible] increased in size

About the time that the muscles of the neck became affected a stupor came on and while he retained the use of his left hand, he employed himself in picking [illegible] straws from the deck as people do the bed clothes in a state of delirium The tongue was locked between the teeth and lolled out at one side of the mouth for three days before death In this case the warm bath was tried, and persisted in, for some time, but without effect and when endeavouring to force the jaw open to pour some medicine into his mouth, the gums were perceived to be spongy bleeding, and part of them falling from the teeth in black masses many of which were loose the fetor of the breath was also extremely disagreeable

There now remained little doubt that the disease in question was Scurvy though I could by no means reconcile circumstances to anything I had either read or seen of it elsewhere

It became, of course, a matter of serious importance to investigate the causes of this singular distemper and to counteract them in some manner so effectually as to secure those that were healthy It soon struck me that the unwieldy corpulency of the Negro who had just died was very probably the cause of the complaint The fattest slaves were accordingly selected, and separated from the rest upon examining them attentively the muscles on different parts of the body but particularly of the extremities were affected in various degrees with that singular kind of induration described in the preceding case Their gums were all affected some of them bleeding, pieces of spongy flesh were seen sprouting from the roots of the teeth, what black people consider as the most unseemly disfiguration, a few had lost several of their teeth Pains and weakness of the limbs were general, tightness and oppression about the praecordia, disagreeable smell of the breath &c A particular sluggishness and dislike to motion, or being spoke to were observed in a few and whenever they laid down they fell instantly into a sleep from which it was difficult to rouse them Wherever there were sores on any of them, the surface was covered with the black clot of blood, and the thin discharge which distinguished all scorbutic ulcers

This disease was for some time confined to the slaves that had been longest on board but particularly to the most corpulent who had taken the least exercise so general was this observation, and so fully was I confirmed of it that when a Negro was becoming rapidly fat it was no difficult matter to determine how soon he would be seized with the Scurvy

I [illegible] among the [illegible] I [illegible] eruption mentioned by [illegible]

When it came to affect more [illegible] I could plainly perceive the natives of [illegible] countries much more liable to it than others These were the Dunos a people rather of a sallow complexion than black, a heavy dull [illegible] stupid, inactive, and gloomy turn of mind While the Eastees who inhabit near Cape Coast are preferred to all other natives of Guinea on account of their genteel shape and fine black colour, were scarce at all tainted with the disease These are a cheerful active lively people and generally the first to raise mutiny in ships, or undertake any hazardous enterprise What has been just now said, strongly confirms the opinion how much predisposition such as depressing passions of the mind concurs in the production of Scurvy while those of the active kind have the happiest influence in the prevention The difference remarked between the inhabitants of the two countries, is probably owing to the dry and elevated, or the low and swampy districts of land where they live Certainly such situations give very different characters to the constitution of both body and mind but this is digressing from our subject The predisposition to scurvy must be also increased by the hardships, the experience from their confinement in the hold of a ship, which, no doubt will keep alive many of those gloomy reflections inseparable from a state of captivity It would be unjust to suppose that the African feels no parting pang when he takes the last farewell of his country his liberty his friends and all that is to be valued in existance! This fact is supported by some cases of suicide, which came under my own observation one of which was conducted with a stoic enthusiasm and plainly evinced the innate love of freedom of uncivilized beings In the night they were often heard making very hideous kinds of mourning something expressive of extreme affliction This, upon enquiry, I found to be owing to dreaming of being at home among their friends and relations, and the melancholy reverie at waking on finding themselves among their captive countrymen in the hold of a slave ship Some of the women in these situations were thrown into violent hysterical fits

Few of the boys had any scorbutic symptoms none of them were shackled, and by being allowed to run about the deck and occasionally assist in the duty of the ship their health seemed to be preserved by the exercise This was also the case with the women for out of the whole number only eight were affected and these of the Dunco country

During this sickly state of the ship none of the sailors were in the least tainted with the scurvy Their diet was the common sea fare a little of the vituals prepared for the slaves, was generally eat with the salt beef they had it, however, in their power to barter some of their provisions with the natives for fresh vegetables The water in use was brought from a stagnant pool at Cape Coast Castle, supplied by rains muddy, and of a very unpleasant taste It abounded with animalcules and

is said to have the effect of producing the guinea worm this seemed to be the case with the slaves purchased to windward, who had no signs of the complaint till after living a few months in Annamaboe Road

Our situation was now so bad that numbers were daily taken ill, and others dropping off, while the Master of the Vessel whose disposition and character were congenial to the trade attributed everything to the machinations of the doctor and devil About the end of April, 1784, our cargo to near 600 was completed by this time seven or eight have died of Scurvy, from eighty to ninety were already ill, and more likely to add to the number Our stock of fresh vegetables at leaving the Coast of Africa did not exceed a few gallons of limes juice ten or twelve dozen of orange and some small baskets of Guavas; this was owing to the Master doubting that the disease in question was Scurvy, which I so confidently asserted

After being four or five days at sea our list of Scorbutics was nearly doubled, much mortality was also to be apprehended from bowel complaints spreading among them I was now a good deal surprised to find two slaves who had not been about fourteen days on board show evident signs of the scurvy, such as Spongy gums pains of the limbs, tightness of the breast, difficulty of breathing fetid breath, contracted hams, &c In a few days after that ten or twelve more of the latter part of the purchase were added to the number Till now the disease had been ascribed to over abundant diet, no exercise, and the want of fresh vegetables I was also well assured that scurvy had never made its appearance among slaves in a Guineaman sooner than some months confinement so that in the present case, some other causes ought to be suspected It is no new opinion, but remarked by some of the oldest writers that the Scurvy is a contagious disease This opinion was plausible from the nature of the distemper, and the number of people afflicted at the same time, but I am extremely unwilling to admit the contagious nature of this disease and if it cannot be propagated that way it is most likely that the tainted atmosphere of the slave rooms which were now full so powerfully predisposed those late purchased Negroes to Scurvy, that the exciting cause was much accelerated in its operations by the foul air which they breathed impure exhalations have therefore, been deservedly mentioned by authors among the remote causes of Scurvy

The small stock of anti Scorbutics carried to sea being soon consumed, the state of the slave was left miserable indeed The decks in every corner were crowded with objects of distress exhibiting scenes of afflictions, equal to any ever recorded of this loathsome distemper Some were found dead in the rooms in a morning or dropped down immediately on coming upon deck, while others expired eating their victuals full in flesh and blood After a few weeks passage however to the relief of these unfortunate wretches and to our own inexpressible joy, we made Antigua, having buried nearly forty by the way It is highly probable, that had the ship been ten days more at sea, half the cargo must have perished, there

[illegible] at three hundred tainted, in different [illegible] with Sierra

In the hurry on making land the slaves were unshackled their confinement in irons being no longer required for the safety of the crew and vessel On coming to anchor at St John's supplies of fresh vegetables were procured from the shore, consisting of shaddocks lemons limes oranges pineapples &c These articles were served to them three or four times a day, and notwithstanding they continued their usual diet from the time we left Antigua, till we came to anchor in Kingston Harbour, Jamaica which was eight or nine days there were little remains of Scurvy among them they were now better fed and repaired for market The coarse joints and offals of beef were boiled among their provisions On the week following, the sale of this cargo of human beings opened at what was called a very high price

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## VALENCIA

By Surgeon Lieutenant Commander E J MOCKLER M B B Ch, D P H, R N

On Thursday January 28 1937 H M S *Neptune* arrived at Valencia which is now the headquarters of the Spanish Government That evening a signal was received from the British Embassy requesting that I would go ashore to see one of their officials who was ill

We were anchored well outside the harbour and on the way in shore I noticed a number of ships most of them appeared to be lying idle at anchor or at the quayside

On landing I saw several sentries they gave me the Communist salute of the clenched fist

Valencia itself is about a mile and a half distant from the port and I was driven to the Embassy in the Charge d Affaires car which had been sent to meet me

Close to the port is a small hospital which had been bombed previously fourteen of the patients had been killed through a bomb exploding outside one of the wards, nearby was a church which had been wrecked by the communists

As I drove along I was struck by the enormous number of posters on the hoardings and walls depicting the worker with the hammer and sickle and photographs of aeroplanes bombing women and children all the hoardings normally given up to advertising were full of these posters C N T, U G T and F A I the Socialist, Anarchist and Marxist Societies calling the workers of Spain to unite against the Capitalist enemy

Just beyond the ruined church but on the other side of the street, a party of about forty workmen were engaged in digging and preparing anti aircraft shelters on a large area of ground on which it had been originally

intended [illegible] flats. Several groups of young children were playing and [illegible] quite unperturbed by these rather sinister preparations for the [illegible] things to come; they were about the only happy faces I saw during my time in Valencia.

The town itself appeared very crowded; the streets thronged with people and the restaurants and small food shops seemed very busy. The trams were all crowded but motor cars were noticeably scarce; those that were about all appeared to be on official business. There apparently were no taxis on the streets.

My patient at the Embassy had had a bad time in Madrid and was suffering from herpes zoster and neurasthenia. He had had some narrow escapes from bombs while in the capital.

I was told at the Embassy that apart from coal and petrol and to a lesser degree bread and meat, the population of Valencia were suffering little hardship. There was an abundance of fruit and vegetables and all the stores had a good supply of tinned food. On my way back to the pier the whole port was in darkness as they lived in constant fear of air raids, so only the side lights of the car were used, these being turned off when we got to the water front.

Altogether we were ten days at Valencia and sixty six refugees were evacuated in that time.

The French authorities had requested that those who were staying in France more than forty eight hours should be vaccinated on board; this was done.

They had been inoculated for the typhoid group and a number of them for tetanus as well.

All the refugees that I saw were what one might call, of a superior type, quite clean, the children looking healthy and well dressed. In one of the parties was a mother and twelve children.

The refugees were taken by destroyer to Marseilles and Gibraltar, the majority to the former place.

I had occasion to go ashore every day to see my patient who was making progress slowly, and the sense of unreality which I had at first experienced began to fade and I noticed more details.

There was a quietness even in the busy streets, a sense of strain in many people, yet very little noise. Valencia had an atmosphere of expectancy.

I took a sample of drinking water from the Consulate and tested it on board and found it quite fit for all domestic purposes, and relieved the Consul's mind by telling him it could be drunk in safety.

I inquired both at the Embassy and the Consulate about the prevalence of any infectious disease and was informed that there wasn't any, the population was quite healthy.

I was fortunate in being able to arrange a visit to the municipal hospital through the Embassy. The hospital lies on the far side of the city away

from the port It is a very fine old Moorish building which has been brought up to date Some of the mosaic on the floor was really beautiful most of the wards were very large and airy I was shown over by the radiologist who spoke a little English he told me they were prepared to take one thousand five hundred cases in a war emergency The wards themselves were very crowded already being two deep on either side this being due he explained to Valencia being very crowded with the refugees almost doubling its population Most of the cases were those one would meet in any large general hospital

I thought the operating theatre was very good and compared well with any I have seen The doctor told me it was the best equipped hospital in Spain Gas and ether anaesthetic is generally used though they have been very successful with sodium evipan for minor surgical cases Most of the fractures were treated with plaster casts

I was next shown the International ward in which were about seventy cases, all suffering from war wounds, mostly fractures

The patients were nearly all from Central Europe, Czechs Roumanians and Bulgarians there were no British

They all seemed comfortable and well looked after there were quite a number of well-rigged extensions in use I also saw several private rooms in use quite neat and tidy These were used for wounded officers

The doctor said they would be only too pleased to do any operations for the British Navy and that they always had an experienced surgeon at hand I passed this information on to the British Consul

There were no gas casualties in the hospital, he said gas had not been employed in the war by either side as far as he knew

He told me they had no infectious cases of any sort but the medical profession was very overworked owing to the great influx of refugees

Inoculation for the typhoid group was compulsory for everyone in the war area

Apart from that one bombing of the port hospital and a few other casualties in the same affair Valencia had so far escaped damage, how long this state of affairs would continue it was impossible to say, but it seemed as if the clouds of war were drawing nearer every day

I have tried to give my impressions of Valencia as I saw it and to convey something of the life and conditions now prevailing in that uneasy city of this most distracted country of Spain

## SOME IMPRESSIONS OF THE HEALTH CONFERENCE AT SOUTHPORT

By Surgeon Captain L. C. HOLTOM O.B.E. D.H.H.

In July of last year I attended as Admiralty delegate the Health Congress at Southport, and although Naval Health officers are familiar with such conferences, it struck me that other medical officers might be interested to hear something of what such a Congress is and does.

These Health Congresses are annual affairs organized by the Royal Sanitary Institute, and are held in large towns or holiday resorts in various parts of the country one factor influencing the selection is the availability of accommodation for visitors, as there is always a large influx; it was estimated that there were over eighteen hundred visitors and delegates brought to Southport by the Congress.

The Royal Sanitary Institute has a number of Fellows, Members and Associates but the bulk of the visitors to a Congress is made up of the official delegates appointed by Government Departments, Dominion Colonial and Foreign Governments and Municipal and County Authorities.

Some time in May I was informed by the Medical Department that I had been appointed as Admiralty delegate and that I should in due course receive the necessary instructions from the Royal Sanitary Institute.

The journey from Chatham to Southport is a long run and I decided to go by train. The Congress opened on the Monday and feeling that I ought to be there for the opening ceremony, I travelled the day before Sunday.

Sunday is never a good day for travelling and I found this a wearisome journey.

On arrival at Southport we found four taxis and a horse cab, so the crowd of delegates had to wait their turn to be driven to their various hotels.

At length I sat down in the deserted hotel dining room at a quarter to eight o'clock to a dinner which had been prepared for seven o'clock.

I learnt later that I might have travelled to Liverpool and then taken a boat on to Southport, but even that route is slow on a Sunday.

The next morning, after breakfast, I went to the Floral Hall on the front, which had been taken as the Congress headquarters, and which also housed the exhibition. Here I signed the register and drew my delegate's badge for a fee of one and sixpence and also received a bundle of the printed addresses and lectures and other literature. Then I had a couple of hours to examine the various exhibits.

Izal had staged a chamber of horrors showing models of various unsanitary conditions, slides of bacteria and live active specimens of pediculi and bed bugs! Another manufacturer of disinfectants had also

a row of containers showing bed bugs in all stages of development to be viewed through magnifying lenses The other exhibits were more orthodox and less startling They included various sanitary appliances hospital furniture, drugs and invalid foods

The Gold Medal of the Exhibition was awarded to United Dairies for an excellent exhibit illustrating the production and marketing of clean milk

The various health societies all had stands for propaganda purposes The Eugenic Society the Central Council for Health Education the Health and Cleanliness Council the British Social Hygiene Council the Health Service Bureau of the Wesleyan and General Assurance Society I had not realized there were so many societies campaigning for public health

The exhibition was formally opened at noon by His Worship the Mayor Councillor I Ball and this was followed by an official luncheon at the Prince of Wales Hotel which I attended A very good luncheon with the usual speeches to follow Here I met the Senior Health Officer of Nigeria and also the Superintendent of one of the Midland Mental Hospitals

Sir Kingsley Wood was to have given the Inaugural Address at 3 p m in the Trocadero Cinema but urgent Cabinet affairs prevented him from attending His address was read for him by Mr Geoffrey Shakespeare M P , the Parliamentary Secretary to the Minister Sir Kingsley s address was mainly devoted to the developments in public health during the last ten years and to the progress to be looked for in the future

During the evening I had an opportunity to see something of the attractions and amenities of Southport The front, formed of extensive sand dunes has been well laid out with gardens and pleasure parks including a very fine open-air swimming bath, in which the water is constantly circulated filtered and chlorinated A swimming bath is a necessity at Southport, for there is no sea bathing

At most times of the day all that can be seen on looking seawards is a broad expanse of dull wet sand Only at high tide is it covered and then to a depth of but a few inches The children have been catered for by providing paddling and boat-sailing pools along the foreshore

One of the chief attractions of Southport and one of which the inhabitants are justly proud, is Lord Street This is the principal street and runs parallel with the front It is a wide and imposing street lined with trees On the one side are fine shops with a glass covered arcade over the pavement affording protection in wet weather on the other side are gardens, frequent seats civic buildings and large hotels At night the street is illuminated with fairy lights strung from the trees in addition to the more ordinary standard lamps The effect gives more the impression of a continental boulevard than that of an English street

The reception was held in the Municipal Buildings and Service delegates attended in evening dress with medals and decorations Incidentally I may mention that uniform is not worn at those congresses but decorations are worn at official evening functions The visitors were received by the Mayor and Mayoress and by Dr J Fenton, Chairman of Council of the Royal Sanitary Institute

There was a great crush in the hall until about 9 o clock, when the non-dancers betook themselves to the balcony and the dancers took the floor Refreshments were provided on a lavish scale in the adjacent Art Gallery

Tuesday saw the opening of the serious business of the Congress, the meetings and discussions of the various sections

I attended the Section of Preventive Medicine which was opened with an address by Professor Cathcart Professor of Physiology in Glasgow Professor Cathcart had been a member of the committee recently considering the Scottish Health Services and his address embodied some of his personal reflections upon this subject

He approached the subject from the point of view of population The first point dealt with was the changing age of the population In the past the Health Services had concerned themselves almost exclusively with diseases peculiar to the young in the future more consideration would need to be given to the care of the aged The birth rate was falling and the expectation of life was increasing if these conditions continued to prevail there would be a gradually increasing number of the aged and infirm to be cared for

It was a striking fact that not only had the infant mortality fallen, but the death rate up to the age of 45 years had fallen to an even greater degree and above this age the expectation of life was greater than it had been in the past

Quoting figures for Scotland he said that those entering life and experiencing the mortality rates of the years 1861-70 would be reduced to 71 per cent of their original number by the time they reached the age of 15 years whereas on the basis of the 1930-32 death-rates the same reduction in numbers would not be evident until the age of 45 years With the 1861-70 death rates the original lives are reduced to half by the age of 40 whereas now half survive until the age of 65 years

As regards the future trend, three main factors will influence the population namely birth rate, death rate and migration and of these the birth rate will exert the greatest influence

Migration he considered a factor of lessening influence The urge towards migration was apparently dying out There were now more restrictions to the free flow of peoples, and material conditions in Britain were now better than in many parts of the Empire, the chance of a better life in a new land was no longer so obvious as once it appeared to be

[redacted] evidence that the dole had [redacted] left her shores

[redacted] the birth rate no further appreciable fall [redacted] or indeed looked for

Birth-rate was a difficult problem The fall was indubitable and had now reached a level at which it could not for any length of time maintain the population at its present level The decline in the birth-rate was to be attributed to deliberate birth control rather than to any decline in the natural fertility of the human species

The falling birth-rate was unlikely to be affected by a mere increase in prosperity, the modern rise in the standard of living among all classes brought with it a diminution in the size of the family Probably the only factor which might arrest the fall was one which seemed at present unattainable—a sense of real and prolonged security

Some recent calculations went to show that the population of Scotland would reach its zenith in 1941, thereafter a slow decline was to be expected

This dramatic change would influence health policy All questions affecting the health of the young would assume great importance and with the increased care for their welfare and health the need for hospital beds would diminish On the other hand the expectation of the prolongation of life would lead to a steadily increasing demand for accommodation for the aged and infirm, and here it was unthinkable that aged couples after a life time spent together should be segregated into separate institutions in the evening of their life

The increasing longevity of the population would mean the longer occupancy of houses with a consequent continuing demand for new housing schemes

How would unemployment be affected? There would be fewer workers Yet on the other hand the steady increase of automatic machinery leads to a diminishing demand for human labour Preventive medicine would however lead to fewer unfit adults and hence a larger available potential labour force The demand therefore for a shorter working day seemed justified but this raised the further problem of provision for the proper utilization of leisure

The speaker then touched on the medical supervision of the population He foresaw an extension of the panel service to cover the dependents of all workers. Here he favoured the private practitioner as against the whole time State medical officer The adoption of the latter would deprive the ordinary man of one of his few remaining liberties—the right to select and change his own medical adviser

I have dealt with Professor Cathcart's address at some length because it was an arresting and stimulating vision of the future trend of public health policy It is an address which is well worth reading

The meeting then proceeded to the direct business of the section papers and discussions on 'The Future of the Isolation Hospital' This was opened by Sir Weldon Dalrymple-Champneys

[illegible] proposals [illegible] this paper Sir Weldon criticized some of the present anomalies in fever administration such as that all cases of scarlet fever should be notifiable and admissible to isolation hospitals solely because the streptococci in these cases caused a "punctate erythematous rash", while severe cases of measles frequently had to be nursed at home, no provision having been made for institutional treatment

He queried the wisdom of providing for rural districts costly isolation hospitals which frequently stood empty, or partly empty for a large part of the year Here he favoured the scheme now being adopted in Denmark, the provision of an isolation block, or blocks in connection with the general hospital for the district There was economy in administration and nursing, with modern methods there was no danger of infection spreading to the general blocks

One amusing incident occurred in the subsequent discussion A layman, an alderman of Belfast, got up and complained of the inconsistencies of the medical profession one day they said one thing and the next contradicted it Apparently his council had recently spent a considerable sum on their isolation hospital and now he had gathered the (erroneous) impression that Sir Weldon had condemned all isolation hospitals as being out of date He became exceedingly heated in his speech and drew cheers from the delighted audience

The afternoon session was devoted to "Tropical Hygiene" This was the first time that such a section had been included in the Congress The papers in this section had no interest for the Naval Service as they dealt entirely with the training of native staffs for sanitary and public health work in tropical countries

Tuesday afternoon was one of the two available dates for visiting Evans Biological Institute and as I had been fortunate enough to secure a ticket I was able to go This excursion was confined to medical delegates and the numbers limited

We travelled by motor coach from Southport to Runcorn via Ormskirk Wigan and Warrington This district is as unattractive when seen from the road as it is from the rail

On arrival at the Institute we were welcomed by Mr Edward Lescher, one of the Directors of the firm, who introduced Dr Mitchell, the medical director in charge of the biological work Dr Mitchell gave us a brief résumé of the various processes we were to see and then divided us up into small groups with a technical assistant to conduct us round

We commenced the tour at the stables and saw the horses used for the production of anti diphtheria serum The Institute is a relatively recent addition to the activities of the firm but is rapidly expanding Extra stabling was in process of construction and nearly completed The old range of stables was hygienically built and beautifully kept, but the new stabling was designed to be even better There is no litter allowed in any of the stables and all droppings are removed at once and the floors hosed down

All the horses looked very fit and well cared for as they are all examined by a veterinary surgeon before they are accepted into the stables. Many of the horses are old Army horses, and these, according to the Army Regulations have to be destroyed after they are no longer of use for producing antitoxin, they may not be resold. A horse does not continue to produce antitoxin of sufficient titre indefinitely and then, if he is not an Army remount, he is sold.

We witnessed both an inoculation and a bleeding. These procedures are carried out in special stalls in which the animal is secured to prevent kicking and rearing, but the horses we saw were quite docile and submitted to all the operations almost without flinching.

The inoculation is given under the skin of the shoulder, after shaving and sterilization. The dose of toxin being given was 200 c.c. It looked a lot of fluid and it raised a very appreciable lump.

After the inoculations the blood is taken at intervals and tested the antitoxin content gradually rises but finally becomes stationary in spite of further injections of toxin. Some individual horses produce a bigger response than others. When the antitoxin value becomes stationary the animal is bled.

The animal is secured as for inoculation and an area on the neck shaved and sterilized. A large needle is then introduced into the jugular vein and the blood run slowly into a large sterile glass container attached to the needle by a short length of rubber tubing. As much as one and a half to two gallons of blood are withdrawn at one operation. The animal is then given a rest to recover and the operation repeated after some days. Each horse yields on an average about six gallons of serum.

We next passed on into the laboratories taking the antitoxin laboratory first, where we saw some of the subsequent processes in serum production. The blood is allowed to clot naturally in the containers and when the serum has separated it is filtered off into other sterile containers. The serum is now stored in the cold for a period of twelve months. The reason for this is that the fresh serum loses some of its potency, at first the fall is rapid but after six months there is little further loss.

The antitoxin titre of each batch is tested on withdrawal and subsequently at intervals when it becomes stable it is ready for standardization and putting up for issue. The final serum may have lost as much as 25 per cent of its original potency but the antitoxin as issued may be depended upon to retain its value over a considerable period.

We were also shown various other sera and antitoxins and the methods of standardization and testing.

In the bacteriological laboratory the preparation of media and various bacteriological growths were demonstrated, also the preparation and standardization of vaccines. All familiar processes to laboratory workers.

We then visited the chemical and research laboratories where we were shown various colloidal preparations of the metals. Collitron is one of the

specialties of the [illegible]. The additional p[illegible] in all apparatus is standardized by [illegible] solutions. [illegible] is standardized by the [illegible] pH determination in this case is quickly done. We were shown the electrical estimation of the pH value a very rapid method. The electrical deviation of the liquid is read off on a galvanometer and the pH value calculated from a graph. Once the instrument has been calibrated and the graph worked out all further estimations are a matter of minutes only.

Large numbers of girls are employed, both in the bacteriological and the chemical departments for filling vials of vaccines bottling and labelling drugs and as ordinary laboratory assistants. Of course they were all working under the supervision of trained technical assistants most of whom were young graduates with the qualification of Ph.D. B.Sc. &c. the assistant in charge of antitoxin production was however an M.B. Girls are preferred as laboratory assistants as they are quicker and more suitable fingered for delicate operations than the average youth of the [illegible].

The last department was the physiological, and here we saw two tests in progress. One was the standardization of post pituitary extract by its action on the isolated uterus of a virgin guinea pig the degree of contraction and the rate of slow relaxation being recorded on a slowly revolving drum and compared with a standard.

The other test was the Friedman test for human pregnancy. A sample of urine from the woman is taken and injected into a virgin rabbit. After forty eight hours the rabbit is killed and the condition of the ovaries examined. If the rabbit ovary shows rupture of a follicle or follicles the urine is considered to have come from a pregnant woman. We were told that the test was reliable in at least 98 per cent. of cases and gave a definite result one way or the other and was also cheap. The fee for each test is 12s. 6d.

The visit has been made very attractive and interesting, and we are grateful to Mr. Lescher and the staff for all the trouble they had taken in preparing demonstrations for us.

On Wednesday morning there were meetings of various sections namely a joint meeting of the Medical Officers of Health and the Section for Preventive Medicine the Section of Engineering and Town Planning and the Conference of Sanitary Inspectors.

I attended the first that of the Medical Officers of Health. The address was given by the President of the section, Dr. W. G. Savage, M.O.H., for Somersetshire and was on "Water and Sewage Schemes in Rural Areas."

The address stressed the difficulty of providing adequate supplies of pure water to rural districts. Many districts were still dependent upon local wells and springs which were often not above suspicion as regards purity and which were liable to fail in periods of drought. The main

difficulty in providing a pipe [illegible] rateable value of the parish or other [illegible] pipe mains the cost of pipes had risen [illegible] the parish might be willing and [illegible] often averse from facing the financial [illegible] referred to various means which might [illegible] over a wide rural area

The main point of the address however was that the speaker wished to emphasize that county and rural councils often constructed a piped water supply and sewage disposal as interdependent Yet it was not at all necessary in many rural districts to insist upon a water carriage system for sewage, to do so frequently imposed a considerable expense with the result that the proposal for the water supply was turned down In many areas the original though perhaps somewhat primitive sewage disposal schemes worked satisfactorily On the other hand a proper mains supply of pure water for drinking and domestic purposes was a necessity to life

Following the Presidential Address there were papers and a discussion on the " Public Dental Services The first paper was by Professor Gilmour, Professor of Dental Surgery in Liverpool The paper showed the existing gaps in the present system of public dental treatment The school child was examined and treated and the insured person in many cases was able to get dental treatment in this respect some of the Approved Societies offered very much better facilities than others But the pre-school child and the adolescent on leaving school were entirely neglected

Every attention should be given to preserving natural healthy teeth and the first point to be considered should be the mothers, so that ante-natal treatment should take into consideration diet and vitamins for the laying down of sound teeth in the growing foetus

The second point of importance was the young pre school child Too often the young child was completely neglected in regard to dental treatment, and when he came to school age had to suffer the loss of teeth which might have served him for life or for many years

The third and very important period was that of the adolescent on leaving school A considerable amount of care and money was spent on the school child but all this was liable to be wasted if a period of years was allowed to elapse before anything more in the way of dental care was undertaken It should be sound finance to preserve that upon which a considerable sum of public money had been expended

Unfortunately public opinion in this country did not seem to be sufficiently awakened In the United States untreated carious teeth were looked upon as a social disgrace

Dr E Ashworth Underwood gave a paper on the work of the Shoreditch Municipal Dental Hospital At this hospital there is a scale of charges for treatment, treatment of insured persons is also carried out at the expense

of the Approved Societies but in certain case free treatment is given on the approval of the Local Health Committee

Later in the morning I looked in at the Sanitary Inspectors' meeting, which was held in the local Congregational Schoolroom Their agenda provided three subjects for discussion I came in towards the latter end of the discussion on "Overcrowding and the Housing Act of 1935"

There were no meetings in the afternoon but visits to various factories and places of interest had been arranged

Thursday was devoted to the Sections on "Maternity Child Welfare and School Hygiene Veterinary Hygiene" and "Hygiene of Food I considered the latter would have more interest from a Naval standpoint

The Presidential Address in this Section was given by Dr L H Lampitt, D Sc F I C on "The Packaging of Foods One of the outstanding features of the distribution of foodstuffs during the last twenty five years is the packing of the articles in small units by the manufacturer in contradistinction to the old method of distribution in bulk

The public has learnt to appreciate the hygienic protection of suitable wrappings in the case of foods An attractive wrapping or container has a definite "selling" value

The speaker then dealt with the general principles governing the selection of a container for a particular food

The first paper was On the Effect of the Colour and Nature of Light transmitted by wrapping materials on Bacterial and Mould Growth by Mr Clayson B Sc , F I C of Messrs J Lyons and Co Most big producers and manufacturers now have their own research laboratories This was a very technical paper The speaker reviewed the subject from the work done by previous investigators from the commencement of interest in the subject in 1877 and then detailed his own experiments and observations

To summarize briefly the lethal effect of light is only appreciable when ultra violet light of fairly high intensity is present The wrapping of food tends to diminish any such lethal effect Light of the visible spectrum has a lethal effect on micro organisms in the presence of certain photo-sensitizers eosin and the porphyrins Such photo-sensitizers are not normally present in foodstuffs, and in their absence visible light has no lethal effect, it may even stimulate growth The experimental evidence showed no appreciable effect of white or coloured light on the growth of moulds and micro organisms

A second paper was then read by Dr Davies, Ph D D Sc. of the Institute for Dairying Research, Reading on The Effect of Coloured Wrappers on the Fat of Fatty Foods

Here the speaker was concerned primarily with the marketing of butter Sunlight causes an oxidation with the development of a tallowy flavour in butter The fat of milk and other emulsions is more susceptible to oxidation than in butter, while the fat of cheese rarely develops tallowiness

A wrapper for butter should be such as to prevent loss of moisture

A [illegible] effect of light passing through coloured wrappers it was found that blue favoured the development of rancidity whereas green yellow and red retarded this effect An old gold coloured celophane was particularly recommended as not only protective but also attractive in appearance

There was also a paper on "Tinplate Containers" by Mr Hirst, M Sc of the Canning Research Station Campden, Glos

The advantages of tinplate containers are that they can be handled with ease and rapidity can be filled with boiling syrup or brine and subjected to any heat treatment they may be closed and processed at the rate of a hundred or more a minute, and may be cooled rapidly The finished product should remain sound for a very long period as it is protected from bacteriological action, light and oxygen

In the early days tin cans were made by hand the edges of the cylinder and the tops and bottoms were soldered In the modern can no solder can come in contact with the food, and the risk of lead contamination is avoided Tin and iron are the only metals which can come in contact with the contained food

Lacquered cans are used for certain types of food Certain fruits as apricots peaches pineapples and pears in which the colour is not water soluble can be packed in plain cans but it has been found in the case of red and purple fruits that contact with a metal surface caused bleaching or discoloration with cloudiness of the syrup Here a lacquered can preserves the colour of the fruit and the clarity of the syrup

For vegetable fish and meat products a different type of lacquer is necessary Many of these articles contain sulphur and will blacken an unlacquered can and a special sulphur resisting lacquer is required

Recently a new type of can has been evolved as a container for beer and other beverages This can is made from lacquered plate and the interior is coated with a layer of wax The wax however melts at a temperature of 150° F , so these cans cannot be used for products requiring sterilization at high temperatures Such a can has many advantages for the consumer It is more compact than a bottle of the same capacity and is not fragile It can be cooled more rapidly than a glass bottle it is hygienic as it is used only once there is no storing of empties A can of any beverage weighs less than a bottle of the same

Such are the advantages of canned beer as outlined by the speaker

The afternoon as usual was devoted to visits and excursions I had booked a ticket for the visit to Lever Brothers at Port Sunlight The motor coach left at 2 p m so one could not linger unduly over lunch and most of the discussions lasted until one o clock, though of course, one could go in or leave at any time

The run from Southport to Liverpool by road is dull and uninteresting I did look forward with interest however to going through the Mersey Tunnel There is a toll at the entrance either end, but one can take a

return ticket There [illegible] to the effect that any vehicle running [illegible] will be charged double toll

The lighting of the tunnel is excellent and one can see clearly the whole length as for all [illegible] for the tunnel is by no means straight

There are four main [illegible] for the going and two for the return traffic the two [illegible] for the slow traffic the inner lanes for [illegible] vehicles the speed must not fall below twenty or exceed thirty five miles an hour I was surprised soon after entering to see traffic lights the reason is a second converging entrance from the Liverpool side there are also similar lights on the Birkenhead side Fire alarms with extinguishers are found at frequent intervals throughout the tunnel The ventilation is excellent and no traces of exhaust fumes were noticed This tunnel in spite of the high tolls, is well patronized as the saving in time is enormous four to five minutes instead of twenty to thirty by the cross river ferry

The model village of Port Sunlight is very attractively laid out Most of the houses have open garden plots in front, all beautifully kept I was told that they were kept up by the Firm or by the individual [illegible]

The Congress members were received in the Reception Hall by Col [illegible] who controls the hospitality department and the reception of [illegible] was arranging that evening, a dinner for about a hundred [illegible] the Imperial Chemical Industries Throughout the year there [illegible] annual procession of visitors passing through the works and this is [illegible] to be one of the best advertisements

The visitors were divided up into batches of about twenty and each [illegible] a guide in uniform As the day was wet the rig was white rubber [illegible] rubber boots white gloves and peaked cap

We were first conducted along special gangways some of which run over [illegible] all the processes can be easily seen without interference to the workers

We commenced with the boiler rooms which hold several large 'pans' in which the ingredients are boiled Each pan is 14 feet square and [illegible] deep and capable of holding 60 tons of material At the time of our visit there was no actual mixing going on but we saw pans of boiling soap After the first chemical interaction the soap and glycerin are separated by means of brine and after the brine and glycerin has been removed the soap is boiled by steam coils in the pans The pans may be boiling for a week before the soap is ready to be run off When ready the liquid soap is run into steel rectangular boxes known as frames Here the soap cools and solidifies, this may require another week When the soap is cold and solid the frames are opened and the block of soap is

into slabs and these which are then dried [illegible] All these processes are carried out by [illegible] the cutting of the [illegible] automatically operated machinery which suggest the [illegible] with huge knives

The bars of soap when dried pass on [illegible] where the wrapping and packing is done by [illegible] tended by girls The bars of soap first pass through a [illegible] which cuts them into tablets trims and stamps them The [illegible] of stamped cakes issuing from the machine is watched by girls who pick out and reject any faulty tablets

Lux flakes are formed by means of rollers which dry and press the liquid soap into thin films which are cut into diamonds by sharp knives The filling and sealing of the Lux cartons is all done by automatic machinery working with uncanny precision

Some of the processes are done by hand especially the wrapping of shaving sticks and some of the toilet soaps These are carried out by girls who appear to work as deftly and quickly as the machines and yet carry on an animated conversation with their neighbours

The canteen organization is wonderfully efficient and up to 1 000 meals can be served There are first aid appliances in all the rooms and a fully equipped surgery

The Congress Dinner was held at the Prince of Wales Hotel in Lord Street, on Thursday evening with Dr James Fenton the Chairman of the Council of the Royal Sanitary Institute in the Chair

The Dinner proved excellent and the company interesting Opposite to me were Dr and Mrs Davey from Hong Kong and of course they knew Gerrard, who appears to have an excellent consulting practice there It is many years since I was in China and apparently Hong Kong has altered a lot

As is customary at these functions the dinner was followed by many speeches A point of interest was that the Loyal Toast was given as "His Majesty The King the Duke of Lancaster" Dr Fenton proposed The Mayor and Corporation of Southport to which the Mayor replied in an amusing speech I forget whether it was Dr Fenton or the Mayor who brought in the story of the Press and the Fried Fish Merchants Anyhow they were both holding a Congress in the same town and the Pressmen sent a telegram to the rival Congress "Success to your Congress Your work is wrapped up in ours"

The toast of "The Delegates to the Southport Congress" was replied to by Professor Dr Mühlens of Germany, and Dr Earl of Uganda while the Service members were able to sit back and smoke their cigars

The party did not finally break up until after 10 30 p m And thus the Congress ended

Friday was the last day of the Conference and during the morning there were meetings of the sections of Veterinary Hygiene National

Health Insurance and Health Visitors Child and School Hygiene I thought the latter would be the most likely to offer something of interest for me

The Presidential Address was given by Dr Buchan, M O H of Willesden on the subject of ' Health Visitors He advocated that all health visitors should be State Registered Nurses, should be trained in midwifery and should also have had a year s training in public health work

The vote of thanks after the address was moved by Surgeon General Cumming of the United States

This was followed by an interesting paper on Child Guidance by Miss Turner the Psychiatric Social Worker at Springfield Mental Hospital Miss Turner was evidently a practised speaker she spoke fluently and well and was audible all over the hall She dealt with (1) Behaviour problems (2) personality problems, and (3) early neurotic traits in children and stressed the value of early recognition and suitable training or treatment For this reason she would like to see all health visitors have sufficient training to recognize these cases and so be able to refer them for treatment while still in the early stages

On Friday afternoon the Mayor and Mayoress held a garden party in Hesketh Park, one of the public pleasure parks of the Municipality The sky was dull and overcast but fortunately the rain kept off One of the features of Hesketh Park is a floral clock a bed of closely massed dwarf flowers planted to represent a clock face with minerals and moving hands which actuated by some hidden mechanism always show the correct time

This garden party was the last official function and after it the delegates packed up and made for home

In this Conference there was little which could be said to have any direct bearing upon naval health problems but there is much of general interest to be gained

This was the first Conference at which a section on Tropical Medicine had been organized and possibly in future years this section will be developed and deal with problems which affect more or less intimately, the fighting services It is quite evident that the Council and members appreciate the attendance of Service Officers at the Conference.

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## THE MANCHINEEL TREE

By Surgeon Lieutenant G D WEDD R N

My excuse for writing about a subject, of which I have so little experience, must be that I can find no reference to it in the current medical textbooks and it is so important that anyone visiting the West Indies should be familiar with the appearance and properties of the tree

Even in those places where it flourishes most luxuriously there

appears to be a great deal of ignorance on the subject. It was not until the end of some months, and after numerous experiments on myself that I learnt which trees were dangerous. Normally these are visiting the neighbourhood for the first time may in his ignorance incur considerable inconvenience through taking unwarrantable liberties. Alternatively if he has heard a little about it he may avoid an excellent bathing beach on account of an exaggerated fear of the tree.

The following is from Chamber's Encyclopædia (1874) —

Manchineel (*Hippomane mancinella*) a tropical American tree of the family Euphorbiaceæ celebrated for the poisonous properties of its acrid milky juice. A drop of this burns like fire if it falls on the skin and the sore which it produces is very difficult to heal. The Indians use it for poisoning their arrows. The fruit is not unlike a small apple dried and pulverized it is a diuretic.

The account is substantially correct but I cannot help thinking that it is a gross exaggeration, or that the author is basing it on the experience of a single hypersensitive case.

There are at least three different, but closely related species capable of causing damage to skin or mucous membrane. The general appearance and the leaf is very similar to an ordinary apple. The fruit may be —

(1) The size and shape of a common crab apple. Green, becoming yellowish when over ripe.

(2) The same size as the above but greyish-brown with deep longitudinal grooves.

(3) Very similar in size and colour to a russet apple (see photograph). This species is relatively harmless but I have heard of attempts to eat the tempting looking fruit being followed by severe gastro enteritis.

The trees occur chiefly in the coral islands where they are most abundant just above the high tide mark but may be found several hundred yards inland. Owing to its abundance on some islands the tree is a potential danger to bathing parties.

There is no doubt that all the species mentioned may cause erythema and blistering but they are unlikely to cause severe damage to the normal skin unless the exposure is unduly prolonged in the patient very sensitive. I have no experimental evidence of the existence of such sensitivity, but infer it from the stories of damage resulting from a trifling exposure.

An attempt to test the toxicity of various species gave reassuring results. The juice was smeared over an area about the size of a threepenny bit on the forearm and left there for increasing lengths of time then washed off with seawater. Nothing happened until I forgot to wash off the juice and left it there for fifteen minutes before bathing in the sea. On that occasion the site was marked by an area of erythema after an hour. Next day there were a few small vesicles which caused no trouble these dried up and fell off in three days. A very different thing from the drops which burn like fire if allowed to fall on the skin. Afterwards the method was in

allow the juice to remain on the skin for a few minutes, then remove the excess and wash in water. After fifteen minutes the part may be rubbed with different specimens of the fruit. On two occasions the application was followed by general prostration and shivering but I have never heard of any serious ill effect and such symptoms might be due to coincidence at the beginning of a fever not attributable to anything unusual in one's diet.

Dilute the juice was found to be less potent.



Fig. 1. General appearance of the Manchineel tree with fruit and flowers.

Perhaps the leaf juice from the plant is the most dangerous part of rubbing the eyes. If the juice enters the eye it may cause great discomfort but not blinding or lasting injury to sight.

*Case History.*—Three men on a bathing party in Barbados were affected by the manchineel tree.

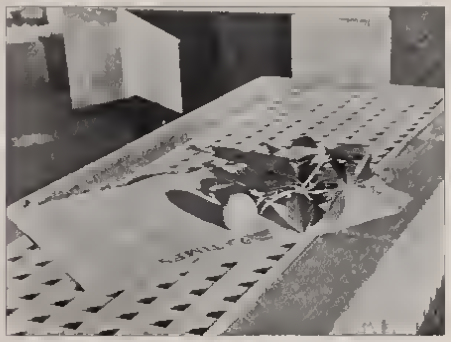
The party bathed in the sea about 2.30 undressing and dressing under a manchineel tree and amusing himself meanwhile by throwing the fruit into the sea. Ninety minutes later he noticed a stinging sensation in both eyes and attended Barbados General Hospital about 4.30. He was treated with boracic ointment and instillation of castor oil.

When seen at 5 next morning at 6.30 he had conjunctivitis of both eyes. The right eye was normal but there was a ring of circumcorneal injection of

[illegible] was a zone of erythema with [illegible] small vesicles on the eyelids and the upper part of both cheeks There was intense burning of the eyes and face with photophobia and blepharospasm He also complained of stinging at the tips of the fingers which were reddened

The treatment was repeated, castor oil being used four times that night Each time it gave great relief lasting about twenty minutes

By 9 p m he was much better and he slept well



[illegible]

By next morning his hands and face were normal the injection of the eyes had nearly disappeared He returned to duty two days after the accident and had no further trouble

In two of the other cases there was some irritation of the penis, which I take to be a local not a general effect

*Treatment* —Juice on any part of the body should be thoroughly washed off with seawater and until this has been done great care should be taken not to touch any mucous membrane especially the eye, with the hands

If the eyes are affected the treatment of choice appears to be alkaline irrigation followed by the instillation of castor oil every half hour until the pain subsides

The natives believe that the juice of the Whitewood Tree is a

[illegible]

[illegible] hypersensitive.

[illegible] "Whitewood" as an antidote should be [illegible].

If it is found [illegible] it will be one more proof of the theory held by the old physicians that the cure is always found in the same neighbourhood as the disease.

## SOME CHINESE AND INDIAN CURES

By Surgeon Lieutenant Commander J. MANSEL [illegible], R.N.

In this article are described several "cures" practised by Chinese and Indian natives. They are on a par with those practised in mediæval Europe, and necessarily appear strange and amusing to our more enlightened selves. Western medicine has not yet penetrated beyond the fringe of native communities, and it is only in the larger towns of Asia that the well qualified medical man has earned the reputation of being a better doctor than his predecessor, the local "witch doctor" or "medicine man."

All medical practitioners who have had the opportunity of dealing with natives realize only too well how conservative they are and their total lack of any understanding of sanitation as we know it. On this account it is not to be wondered at that their centuries old beliefs die hard and are not readily replaced by more modern ones. Much patience is required in dealing with these people, and it is not always amusing to find one's own treatment suddenly dropped in favour of some ancient and entirely useless [illegible] which is considered far more likely to succeed than the three daily doses of medicine ordered from the dispensary.

### Indian Cures

A favourite remedy for convulsions in Indians is to brand the patient [illegible]. The iron is usually applied to the centre of the forehead, both temples and the shoulders. Branding of the abdominal wall is [illegible] for various internal derangements, and the disfiguring [illegible] which result from this useless procedure remain for the rest of the [illegible] as evidence of some previous disorder.

[illegible], both human and animal, plays a big part in native medicine, and Indian children are commonly given their own morning urine to drink

until they are 12 years old This custom is supposed to prevent the children becoming ill but does not in my experience appear to be very successful

For slight ophthalmic injuries the comb of a cock is cut and the blood dropped into the patient's eye, but it is not known whether this is a common practice or not I have been told in all seriousness however, by a well qualified Indian dresser that a most successful method for removing small foreign bodies, such as flies from the eye is merely to walk backwards!

An Indian sometimes desires to know whether his child's illness is due to the unfortunate infant having been looked at by someone with an evil eye In order to prove this a chilli is fried in a pan with some salt and pepper If the mixture splutters the proof is positive whereupon the contents of the frying pan are removed from the house and thrown round the nearest street corner

Mumps may be cured in two ways, either by simply wearing a woman's gold necklace for seven days or by applying a mixture of indigo and limejuice to the swelling twice daily

An Indian has a peculiar method of deciding whether the present is the optimum time for performing certain acts It is a simple one and may be carried out by anyone who does not suffer from a deviated nasal septum He merely puts his finger to his nose and blows, and if the air is exhaled through the right nostril his mission will meet with success, whereas if it comes from the left it is decided to wait awhile It is not known what happens if both nostrils function equally well but they probably very rarely do as one side is usually more congested than the other on any particular day

The treatment of burns is based on more scientific principles and the application of mud to the burnt surface at least prevents the access of air to the part On the other hand one cannot help feeling a little surprised when a small child is brought along complaining of headache and on enquiry one elicits the fact that the brownish-looking material on the shaven part of the child's head is cow dung

In order to gain the permanent affection of their children some parents when their baby is born take liquorice root and rub it on a smooth stone, the resulting sticky material being then mixed with the mother's gold wedding ring dipped into the mixture, and the powder placed on the infant's tongue This may be the cause of a very noticeable characteristic amongst Asiatics viz the great affection which outwardly exists between parents and their children, and more especially between the latter and the male parent

The roasted flesh of crocodiles and certain monkeys is given thrice daily in cases of consumption whilst in whooping cough the flesh of green frogs cooked in butter is prescribed in the same way. The claws of a tiger and pieces of tiger skin when worn round the neck also constitute a cure for whooping cough Gold jewellery which has been warmed over a fire is

sometimes [illegible] warmed piece of cloth is [illegible] applied in cases of dog bites

A cure that is sometimes practised in cases of malaria, and probably one of the more popular ones consists of a mixture of charcoal and whisky taken twice daily The native dislikes quinine and this method of treating malaria, though less certain in its results, is surely more pleasant than any other

### Chinese Cures

The Chinese have many peculiar methods of dealing with confinement cases which are not quite normal An example occurred quite recently within a few yards of a hospital and in the presence of a fully qualified midwife. The labour in this particular case was somewhat delayed and, in spite of the midwife's reassuring remarks, the expectant mother sent for her father in law so that he could carry out the necessary procedure for hastening the child's delivery This consisted in the father-in law rubbing an old pair of trousers across the woman's abdomen a certain number of times and saying a prayer As the result of this exhibition the mother was duly delivered of a healthy child Another way to ensure quick labour is to place a copper coin in a basin of vinegar and drink the fluid Yet another is to drink water to which ordinary ashes have been added

The placenta of a mother's first born, when boiled in water and the extract drunk, has a reputation for curing tuberculosis So also has a dried caul when burnt to a powder and dissolved in water

It is a sure sign that a Chinese has recently suffered from some fever or other malady if he is seen to have pinch marks on his body One can reject all new entrants for work who show these marks without any further medical examination The flesh is pinched most commonly for fever, but also for headaches and fainting attacks Babies suffering from convulsions are given urine to drink and this is probably as good a cure as any for these infants except possibly an enema!

The remedy for chronic rheumatism is a somewhat spartan one but corresponds very closely to our modern mud baths A trench is dug and the patient turned in it up to his neck and left in this position for a day or two Pimples are treated by applying to them a mixture of human milk and powder obtained by rubbing certain sea-shells on a stone, or by simply rubbing the pimples with the small jacket belonging to a virgin

The cure for an ordinary stye is very simple and apparently quite efficient The sufferer takes seven rice corns and goes to the nearest well One of the corns is held in front of the affected eye and then thrown into the well This is repeated seven times on each of three consecutive days For mumps, as in the case of Indians, gold is worn round the neck, usually a gold ring on a piece of string The immediate application of ink is a very common method in the treatment of burns I once prescribed red ink for a small child who had burnt her leg and no harm resulted

[illegible] mothers are in the [illegible] skin has been [illegible] other [illegible] reason and then the mothers [illegible] They place five small onions in their mouth take a mouthful of water chew the onions and blow the scented water over the child's face which has previously been covered with a white cloth Another mouthful of water is taken and again sprayed over the cloth This is repeated five times A somewhat similar procedure is used as a remedy for flatulence in babies Five onions are chewed and while they are still in her mouth the mother sucks the child's umbilicus three times The hands legs and eyebrows are each sucked three times, and finally, in order I suppose to compensate herself for having, carried out these unpleasant practices, the mother washes her mouth out with brandy

The marrow juice from a feather pulled out of a cock's wing is dropped into the eye as a cure for minor injuries A seemingly drastic measure for extracting teeth in cases of severe toothache was described to me recently by someone who had seen the method used with success A certain powder of secret composition is placed over and around the tooth and the patient instructed to cough The effort of coughing causes the tooth to fall out of the patient's mouth

One could continue writing on similar cures for many hours but the samples given should indicate sufficiently well the type of mentality which the doctor working in the tropics has to deal with Unless the doctor can produce drastic results with his medicines the native is unlikely to give up his own system of treatment for one which he does not understand and which does not always succeed And who shall blame him? One can only educate these people by example and this is a slow progress but by no means an impossible one

## Clinical Notes

### REPORT ON INFLUENZA EPIDEMIC IN WINTER OF 1936 37 R N H CHATHAM

By Surgeon Captain J G Dawson M D M R C P R N

#### Influenza

During the month November 10 to December 10 1936 there was a large influx of apparent influenza cases But the influenza virus was not detected by ferret inoculations, and the reproduction of the typical syndrome in the ferrets This contrasted with the ferret positive results in similar outbreaks in London and in Uxbridge during the same period The highest daily number admitted was 19 and the total for that period was 207 Thereafter, the epidemic waned in virulence and in numbers partly due to the seasonal leave periods

[illegible] thony were [illegible] the [illegible] Returns [illegible] [illegible] (2) minor (bilateral [illegible] of the disease [illegible] (1) blocking of [illegible] with tracheitis [illegible] (1) [illegible] and fances [illegible] ing in mens [illegible] a developed capillaries [illegible] echo pneumonia [illegible] od there were no death

Of [illegible] vas n sharp convalescence [illegible] clinically [illegible] ted up to February 12 in [illegible] Since that time [illegible] ll [illegible] rwards cases have been [illegible] and in [illegible] of this epidemic which [illegible] factory I to 20 cases [illegible] at the rate of 30 to 40 per [illegible] the highest intake be [illegible] January 4 and 44 on January 11 This hospital was taxed to [illegible] these dates The total number [illegible] admissions was 500 This [illegible] in most positive and correspondence with the London and the [illegible] epidemics of 1936

The epidemic was studied by Dr Stuart Harris and a team from the National Institute for Medical Research at Hampstead, who came down to Chatham for the purpose To widen the scope of the enquiry, the officers of the Medical Division of R N Hospital, Chatham, co operated The epidemic was studied from five points of view (1) bacteriological (2) clinical (3) blood pictures (4) radiological (5) treatment

(1) Gargings from selected cases were collected at the early stages of the disease and sent to Hampstead The ferrets responded with the typical syndrome

(2) *Clinical*—The typical case had pyrexia with a second fall rise on the third or fourth day so that the chart resembled roughly the letter M The pharyngeal wall in some cases was dry and very red and in others moist and velvety There were a degree of tracheitis frontal headache and the nares were blocked with mucus Complications were (1) bronchopneumonia and capillary bronchitis these were frequent, (2) sinusitis, the antra and the frontal sinuses being commonly attacked, (3) myocarditis persisting, for some time after convalescence (4) nephritis in one or two cases (5) streptococcal invasions of the throat which rapidly spread to contiguous cases 37 cases developed bronchopneumonia (four of these died) 14 cases developed bronchitis 1 cases developed tracheitis 2 cases developed myocarditis 4 cases developed sinusitis 2 cases developed nephritis

(3) *Blood Pictures*—The so called diagnostic leucopenia at the commencement of the disease was not established during this epidemic

(4) *Radiological*—Patients presenting physical signs in the chest were x rayed The findings in the non pneumonic cases were more interesting than those suffering definitely from influenzal pneumonia The latter were sometimes lobar in type and sometimes bronchopneumonia Several cases which did not show physical signs had x ray appearances of bronchial exudate or capillary bronchitis

(5) *Treatment*—The Hampstead workers had prepared as long ago as 1934 a hyperimmune horse serum with specific neutralizing properties for influenza virus Some of this serum, concentrated and purified for human inoculation had been used on the earlier cases and it had been thought that large doses of serum intravenously had a beneficial effect on simple cases of influenza Five cases with respiratory complications were selected and received large doses Three in number reacted favourably with immediate relief of symptoms a shorter bout of fever, and rapid clearing of chest signs. A second batch of serum was used on one case only He received a small dose intravenously, but had a severe reaction Nevertheless pneumonic signs had largely cleared twenty four hours later and the patient had improved in all other respects It was not possible to say whether this effect was specific or non specific

A [illegible] scheme [illegible] by Dr Sm[illegible] and the hospital [illegible] to x-rays w[illegible] funds fo[illegible] part to [illegible] five complete

## VOLUNTEER BLOOD DONORS AND MALARIA

By S[illegible] and MOLLY M[illegible]

C[illegible] Chur[illegible]

O[illegible] Sick Bay [illegible] last [illegible] two days. Then he [illegible] two days not [illegible] to R.N. hospital [illegible]

Provisional diag[illegible]

*Condition on admission.*—[illegible] Yellowish tinge of skin [illegible] side of belly. [illegible] examination.

*Previous History.*—[illegible] fit during [illegible] described as [illegible] ointment. The skin [illegible] scarring on left [illegible]

Laboratory [illegible] per c.mm. 2,800,000 ([illegible] cells sect.) [illegible] 10,000 polymorph[illegible] nucleated 6 per [illegible] What was the cause of the [illegible] there a tropical ague, the [illegible] Friedreich's test and [illegible] diameter of red cells? [illegible] pressure from 8 cells per [illegible] mgm. per 100 c.c. culture sterile. [illegible]

During the period [illegible] tests [illegible] control [illegible] examination [illegible] He [illegible] course of N.A.B. had been started [illegible] are exhibited [illegible] long kept very few [illegible]

On December 20 [illegible] from [illegible] of *Plasmodium falciparum* [illegible] passed with N.A.B. and [illegible] of the spleen was just [illegible] from hospital on January 21, [illegible] samples of his first course of N.A.B.

He was re-examined on March 17 [illegible] of his foregoing [illegible] His blood picture was [illegible] Wassermann [illegible]

*Discussion.*—[illegible] of the incidental parasite

[illegible] W[illegible] than by the [illegible] [illegible]ority [illegible] The [illegible] The [illegible] crescent was [illegible] good luck

The [illegible] little doubt that the ulceration of the groin was syphilitic though [illegible] flatly denied any exposure or genital sore (he suffers from phimosis)

Does malaria *per se* cause the Wassermann reaction to become positive

Syphilis and malaria are pandemic diseases That they should both be present in the same patient is surely by no means unlikely

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## A CASE OF CONGENITAL G P I

BY SURGEON LIEUTENANT F E HOLMES M D R N

G M aged 19 joined the Navy in May 1935 At first he was quite happy but then as he himself described it he used to get his leg pulled because he was [illegible]ft Nothing he did was right He used to lose his temper very easily and had fits of crying

He went to the sick bay of his ship to ask could something be done for these fits of temper and crying? Here it was found that he had immobile pupils, and was sent [illegible] to R N Hospital Haslar for further investigation

He appears to have been a healthy child and to have attained normal school standards There was no history or evidence of acquired syphilis He looked healthy and was friendly and rational

Clinically every system was normal until his eyes were examined His right pupil was a little larger than the left—both showed no reaction to light or accommodation

Lumbar puncture was performed There was no increase of pressure and [illegible] of clear fluid were withdrawn There were 24 lymphocytes per c mm , and a slight increase of globulin The gold curve was 4555432111

The Wassermann reaction was positive, as was also the blood Wassermann reaction

Surgeon Commander (D) E G Adams kindly reported on his teeth Upper incisors are somewhat barrel shaped lower incisors are small and pig shaped Molars fully erupted and not hypoplastic Upper wisdoms rather small Dental condition not really typical of congenital syphilis

He remained in hospital three weeks During that time he had many fits of depression and crying with outbursts of temper He was so quarrelsome with other patients that he had to be put in a cabin by himself He was invalided from the Service

The treatment of congenital G P I is discussed in the Medical Annual 1937 page 233 It is interesting to note that whereas in acquired G P I malarial therapy has been such a success in the congenital disease it fails

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## THE TREATMENT OF BURNS WITH MERCUROCHROME

BY SURGEON LIEUTENANT W D GUNN M D C M R N

The treatment of burns of the second and third degree while relatively simple under hospital conditions may become a very difficult and unsatisfactory proceeding in other surroundings The introduction of tannic acid was an important advance in surgery It is not always possible, unfortunately, to use it in all situations with good results Tannic acid is at its best where there are extensive burns and the case is treated in hospital There are, however, many burns of a minor character which do not require hospital treatment or even treatment

[illegible] In these cases [illegible] method of treatment

The drug or remedy [illegible] requirements (1) It should form a p[illegible] (2) it should keep the area free from infe[illegible] epithelial[illegible]ation (4) it must be easily appl[illegible]

For these reasons, follo[illegible] mercurochrome has been used

Mercurochrome is the [illegible] system and contains about 26 per cent [illegible] is used in strengths of 1 to 4 per [illegible] being used on the skin and [illegible] It is not toxic, as it has been use[illegible] it is used over large are[illegible] poisoning may occur [illegible] poisoning and only quotes one [illegible]

This drug fulfils all the re[illegible] have been obtained with its [illegible] The procedure used is as follows (1) All [illegible] over with hot normal saline (2) [illegible] is painted over the area and dri[illegible] hand lamp with a carbon fila[illegible] day and progressively less [illegible]

No treatment is usually [illegible] if no dressing is applied [illegible] necessary it should be very l[illegible] In this way there is no [illegible] throughout. After about seven days [illegible] a completely epithelialized surf[illegible]

The advantages of this [illegible] and the chances of infection [illegible] important when a la[illegible] small staff and surgeons is not [illegible]

[illegible]


[1] T[illegible]

[2] [illegible]


## TWO STRANGE APP[illegible]

By Surgeon Lieutenant Comm[illegible]

Case 1—D J T aged 16 [illegible] the R N Sick Quarters Shotley [illegible] tonsilitis On November 11 his throat [illegible] as he was complaining of abdominal p[illegible] the following history —

He had awakened at 0300 that mo[illegible] At first this was felt all over the abdom[illegible] right iliac fossa He had vomited whe[illegible] the bowels, which had been regular, wer[illegible] breakfast No other symptoms were compl[illegible] history of abdominal pain

Examination Pulse 80 temperature [illegible]

[illegible]

[illegible]



[illegible] of other [illegible] the [illegible]

The [illegible] appendicitis [illegible] the history of recent [illegible] was thought [illegible] the [illegible] abdominal [illegible]

I told the [illegible] let me take his appendix out. This seemed to cheer him up considerably [illegible] so much that he volunteered the following strange piece of information: "I know what has given me appendicitis

[illegible] pain [illegible] the [illegible] was [illegible] clip was shown [illegible] cutting and the [illegible] and right [illegible] tender only [illegible]

Operation 1.3 [illegible] low paramedian [illegible] peritoneum. The [illegible] naked eye evidence [illegible] was now made for [illegible] just below the duodenum [illegible] mesentery were [illegible] here with a few [illegible] bowel containing [illegible] was opened in its [illegible] removed with forceps [illegible] its end was enlarged [illegible] closed without drain

Except for some [illegible] was uneventful [illegible] referred to his right [illegible] sharp bent end of one [illegible] to the perforation of [illegible] the appendix region [illegible] Most than a spatter [illegible] and not above it as in [illegible] which escaped run down [illegible] intestine to the ileo-caecal

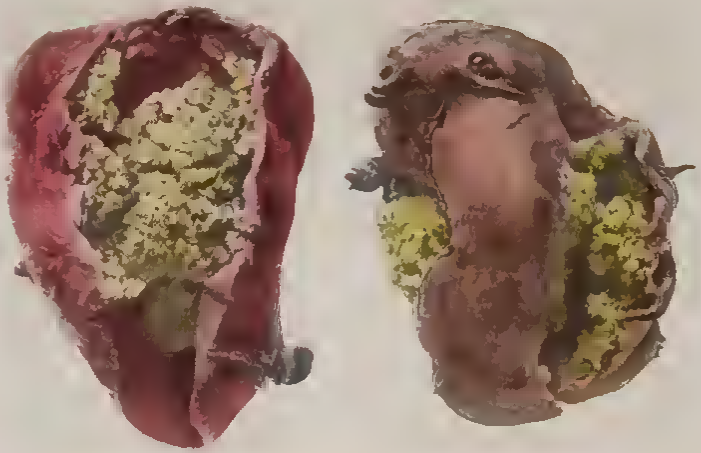
*Case 2.*—It is still [illegible] basal pneumonia and an [illegible] the following case is just [illegible] how the presence of an [illegible]

A. T. L. aged 16. [illegible] pain of gradual onset [illegible] constant aching nature [illegible] abdomen. No other [illegible] abdominal pain but [illegible]

Examination on the [illegible] The tongue was clean and [illegible] deep palpation to the right [illegible] The boy was kept under [illegible]

The following day the [illegible] Leucocyte count 13,800 [illegible] better. The pain was [illegible] Examination now also [illegible] left side of the abdomen [illegible] of the right side of the [illegible] umbilicus to the right [illegible]

Though the [illegible] the high temperature caused [illegible] lung led



PAP [illegible]

Photograph and [illegible] by [illegible] Co[illegible] R C

[illegible] papillomata [illegible] the pelvis [illegible] seen in the [illegible] lymphatics.

'Microscopically the tumour [illegible] is composed of elongated [illegible] blood vessels in connective tissue [illegible] lined by multiple layers of [illegible] epithelium arranged in [illegible] tufts. [illegible] of papilloma. [illegible] is irregular growth [illegible] the cells [illegible] destruction of the [illegible] and renal pelvis [illegible] The condition [illegible] regarded as malignant.

At present [illegible] out of Appointment [illegible] he was in [illegible] of the Indian [illegible] Hollandia [illegible] time extraperitoneal [illegible] growth [illegible] is found [illegible]

He made an excellent [illegible] and was discharged to sick [illegible] May 10 1937.

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## LANDING HEDICAL CASES ABROAD

By Surgeon [illegible] A W TOLD R N

Most Naval Medical Officers [illegible] have had the following [illegible] British ports abroad— [illegible] landed in private [illegible] ambulance supplied by the local military authorities. It [illegible] impossible to fit the cot in the Naval ambulance because [illegible] the case has to be transferred to the Naval Pattern stretcher.

The object of the [illegible] is made by the use of the Naval [illegible] (A & O 1151/36) which [illegible] Navy in Malta [illegible] Stretcher Cot is not available [illegible] Naval Cot [illegible] used.

(1) Request the shipwright to reduce [illegible] of room wood [illegible] present width of 2 ft 4 in to a width of 1 ft 10 [illegible] No change in length.

(2) Induce the sail maker to [illegible] canvas cot cover [illegible] reduced dimensions.

(3) Draw a No 17 mattress—not Shipwright's hammock mattress [illegible]

One then has a modified Naval cot capable of being carried [illegible] type of ambulance instead of the present cot which can only be carried in Naval ambulance. Further this modified type is rather easier to handle than the present broad type affords the patient an equal amount of security and protection and almost an equal amount of comfort. One is apt to forget that at even so near home as Gibraltar one has often Dockyard working hours to rely on Military ambulances, and there is no Naval ambulance in Malta.

It is suggested that it will be found useful to carry a supply of cots of this kind.

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## Reviews.

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MURDER IN THE FLAGSHIP By P N Walker Taylor Surgeon Lieutenant R N (Ret) First Edition 1936 London Thornton Butterworth Ltd Price 7s 6d net

We have, again the task of reviewing a non technical book for 'Murder in the Flagship' is not a medical treatise on the injuries of the victim but a frank detective story of the type which appears so popular in these days.

An important point in many such stories is the topography of the site of the crime, and in this book we find ourselves very much at home. The diagram and

The term "punch drunk" has been in the news of late. It does not refer to the addiction to a new out-of-date alcoholic beverage, but to a condition loosely known as dementia pugilistica. It is interestingly reviewed by Dr. Macdonald Critchley. Some of the synonyms used in America are worth mentioning, as an example of transatlantic word coining. Besides "punch drunk" we have "punchy," "goofy," "slug nutty," and perhaps most delightful of all, "slap happy." It is perhaps as well after this to mention that the medical term for this condition is "traumatic encephalopathy," and to realize that this condition is not only a temporary one which may be found useful in the courts as an excuse for some delinquency, but is a form of progressive mental deterioration.

Under "Neurosis and Unemployment," by H. Devine, M.D., F.R.C.P., we find a description of the effects of unemployment on the mentality. It appears that there is a definite tendency for the mental condition to influence the physical basis of the sufferer. A certain "foolishness" is easy to understand, but something deeper than this tends to occur so that the "Capitalist system" can become a greater grievance than the sufferer's own misfortunes.

Thus we could go on indefinitely selecting items for comment from this most interesting volume, but we must leave the matter of further enlightenment to those wise individuals who buy and read the "Medical Annual 1937" for themselves. In conclusion it is impossible to imagine a single volume in the library of the Naval Medical Officer which would do more to prevent that suspicion of "fustiness," which occasionally steals over him when serving in a ship or on a station where clinical material is small, than the "Medical Annual." An occasional half hour's perusal from time to time will be sufficient to make him feel that he is not getting astern of station in his professional knowledge.

THE HISTORY OF THE ACUTE EXANTHEMATA. The Fitzpatrick Lectures for 1935 and 1936 delivered before the Royal College of Physicians of London by J. D. Rolleston, M.A., M.D., F.R.C.P., F.S.A., Medical Superintendent Western Fever Hospital, London. First Edition. 1937. Pages ix + 113 with 10 illustrations. London: William Heinemann (Medical Books). Ltd. Price 7s. 6d. net.

The number of medical histories which is published each year testifies to the increasing interest in this aspect of our profession. For some the history of a subject facilitates its memorization, or lessens the tedium of its instruction. It is no more than the sugar on the pill for others; it creates an impression of balance and perspective; but to the epidemiologist the study of history is an essential part of his science. It is only by a survey of long periods of time that he can observe the varying character and age incidence of infectious diseases and the factors governing these changes.

Dr. Rolleston has brought great qualifications to the task of writing a history of that group of epidemic diseases the acute exanthemata: not only is he an established authority with long practical experience of his subject but an historical writer of repute and a Fellow of the Society of Antiquaries. Where Dr. Rolleston has failed it is therefore unlikely that others may succeed, but it is disappointing that he has been able to throw us now light on the doors when these diseases began to appear in Europe, whence they spread, their recurrent waves and varying manifestations. Reference is made to the epidemic which visited the army of Alexander the Great, but no opinion is expressed on those others which swept over the ancient world and altered the course of history as did that of A.D. 164 which extended over the Roman and Chinese Empires for sixteen years undermining the fabric of the former and causing the fall of the Han dynasty. Dr. Rolleston's views would also have been of value in connection with the epidemics of A.D. 543 in Constantinople and A.D. 590 in Rome if only to exclude the possibility of their being exanthematic attacking non-immune populations.

The book certainly re[illegible] undeniably [illegible] to compile [illegible] recent epidemics owing to [illegible] fixed conceptions and [illegible] variety of empirical theories [illegible] very modern in the nomenclature of the exanthemata [illegible] underlying causes of ideath their specificity finally en[illegible] [illegible] and [illegible] clean lover hospital ward whose reading is confined [illegible] the keen is difficult to visualize the position of a practitioner in [illegible] when Liebermeister and Pfeiffer had not yet been distinguished from each other [illegible] pictures of an influenza of 1889 whose books provided no clear picture [illegible] measles and were unprepared to limit its specificity

By contrast with this confusion [illegible] read that as early as 1786 it was recognized that scarlet fever [illegible] was manifested by the presence of a sore throat. The period of [illegible] knowledge and opportunism which [illegible] a century and a half [illegible] to be a record one yet there is little question at present that the [illegible] profession is prepared to give a scarlet fever case the liberty allowed to [illegible] the streptococcal tonsilitis patient or [illegible] to place the same restrictions on both

Those interested in the evolution of knowledge in this controversial field will find their material well tabulated in this book which is divided into sections for each disease with very complete exhaustive bibliographies at the end of each one. These sections are illustrated by reproductions of portraits of authorities on the disease discussed which include one of Bretonneau. It would add to their value if the sources of the illustrations were stated. The book is completed by an [illegible] index of persons and an index of subjects

The Morphine Habit and its Painless Treatment. By G. Laughton Scott, M.R.C.S., B.A.Oxon. [illegible] late Senior Physician London Neurological Clinic, late Chief Assistant Neurological Department Guy's Hospital. Second edition. 1937. Pp. 105. London: H. K. Lewis and Co. Ltd. Price 5s. net.

This is a well written and interesting little book. The subject is not one that actively concerns the Naval Medical Officer but from a sociological viewpoint it should interest everyone of us.

The author divides morphine addicts into two types.

(1) The degenerates or vicious weaklings. Those who take to drugs from calculated self indulgence.

These are the "dope fiends" of popular fancy and manage to say they form a very small proportion of all addicts.

Their reclamation is well nigh impossible.

(2) Those who acquire the habit during illness (chronic rheumatism, neuritis, [illegible] disorders are cited as common causes) during periods of worry, anxiety or [illegible] during periods of overwork and fatigue when they hope morphine will "tide them over". Doctors are frequent victims as there is such easy access.

The life of the addict is really a round of weariness, anxiety lest his friends discovered, coupled with a perpetual fear of supplies failing. Once the habit is acquired it becomes an ultimate physical necessity and the so-called [illegible] pleasure is a myth. Dr. Laughton Scott points out that it is unusual [illegible] to find (apart from the true drug-addict) who does not truly wish to be cured.

Morphine has a double action. (1) Vagal stimulant and (2) narcotic. Its [illegible] action in small and gradually increasing doses is the former—it is a strong vagal stimulant and conversely a sympathetic depressor. If this fact is grasped it is easy to understand the symptomatology of chronic morphine poisoning, [illegible] owing of the symptoms of deprivation and it gives one the clue to treatment.

The addict is really suffering [illegible] to [illegible] H[illegible]egard and emaciated His breath is foul He l[illegible] appe[illegible]tite [illegible]mpated He is asthenic and suffers from [illegible] in [illegible] choe—the acquiring of his drug and for this l[illegible] [illegible]

Sudden withdrawal causes [illegible] [illegible]ng He is restless and tremulous There is [illegible] to every stimulus Later diarrhœa and vomiting occur and [illegible] collapse and death

The danger of treatment by sudden withdrawal [illegible] [illegible] For long treatment by replacement of morphine by [illegible] [illegible] and hyoscyamus group has been recommended Dr Legg [illegible] [illegible] this method He recognizes the importance of the [illegible]—the patient's trust in his doctor and attendants Tinctu[illegible] [illegible] fluid extract of hyoscyamus are also vagal stimulants and [illegible] [illegible] doses *pari passu* with the gradual reduction of morphine [illegible] are exhibited to ensure sleep Alcohol is contraindicated for [illegible] creasing for morphine The avoidance of any sympathetic stimulation [illegible] or physical fatigue insomnia &c is an absolute essential [illegible] must be remembered well into convalescence

In the author's hands the average duration of a course of treatment is a month He wisely does not claim a hundred per cent cures but his results have a favourable comparison with any of the recognized methods of withdrawal A relapsed patient returns to him

This is a logical approach to a problem which is larger than many of us can realize

A Textbook of Medical Bacteriology By R W Fairbrother D Sc M D M R C P Lecturer in Bacteriology University of Manchester late Rockefeller Fellow in Bacteriology Lister Institute London First edition 1921 Pp 437 with 4 coloured plates and 12 illustrations Published by William Heinemann (Medical Books) Ltd Price 15s

The book is described as an outline of the medical aspects of bacteriology The author points out that the field of bacteriology has become so greatly extended that no account of the whole of it even in outline is possible in the short time available in the medical curriculum He has made the attempt therefore to give an account of those aspects of the science that are of particular importance to the student and practitioner that is a description of bacteria as agents of disease of immunity and the everyday application of bacteriological methods in the prevention diagnosis and treatment of disease The main part of the book under the heading of Systematic Bacteriology gives a very readable comprehensive and lucidly coordinated account of the principles which the author has set out to expound

In each chapter a genus of bacterium is taken and a comprehensive description given of the morphology cultural characteristics biochemical activity resistance serology toxin production and pathogenicity There follows an account of how the bacterium produces the disease in question the prophylactic measures to be taken and finally a most useful description of the therapeutic measures adopted with particular reference to the use of vaccines and sera with a very fair review of the values of the different methods and substances

The first part gives an instructive account of general bacteriology including morphology cultivation immunity antibodies and the various aspects of hypersusceptibleness The opening chapter is an interesting history of the development of bacteriology with short accounts of the discoveries of well known workers in this field of science

The final part consists of three chapters which give very succinct descriptions

of staining methods preparation of media and serological technique which should be of much value to those requiring a concise and easily referable account of these procedures

The coloured plates show very good pictures of the commoner bacteria, and the whole book is very well produced and printed and makes a most useful addition to a doctor's library

ROSE AND CARLESS'S MANUAL OF SURGERY By Cecil P G Wakeley D Sc F R C S, I R S Edin Senior Surgeon King's College Hospital Director of Surgical Studies and Lecturer in Surgery King's College Hospital Medical School Surgical Consultant and Examiner in Surgery Royal Navy, &c and John B Hunter M C, M Ch Camb, F R C S Surgeon King's College Hospital Lecturer in Surgery, King's College Hospital Medical School &c Fifteenth (Coronation) Edition Issued in two Volumes 1937 Pp xii + 1618 with 50 pages of index, 948 figures and 18 colour plates Cloth 6½ × 9 London Bailliere, Tindall and Cox 7 and 8, Henrietta Street Covent Garden Price 30s

We have before us the two volumes of the Coronation Edition (Fifteenth) of this companion of our surgical childhood The cover marks the occasion of publication not with the reproduction of the effigies of Their Majesties as they appear on the Coronation Medal together with St Edward's Crown and the King's Royal Sceptre This makes an attractive as well as a commemorative covering for the wealth of material within The original dedication to Lord Lister as it appeared in the first issue has been restored, the dedication being illustrated by a photograph of a bust of Lord Lister which is now in the Royal College of Surgeons As we read the appointments held by the Authors the responsibility for these two volumes is in safe hands with King's College Hospital

The two volumes contain a slightly increased number of pages as a result of the introduction of new matter in the chapter on The Surgery of the Sympathetic Nervous System Other chapters have been rewritten In spite of these additions and revisions we recognize our old friend and find it no less friendly as we need

This Manual of Surgery is so well known—it has American Editions and Chinese and Arabian translations—that it is superfluous to call attention to it On the other hand we can observe that in its thirty ninth year of existence it appears in its fifteenth edition, and we are ignoring the numerous reprints which have been found necessary this speaks not only for its popularity, but what is of more importance for its *long standing* popularity

The printing is all that could be desired and the illustrations appear to be much clearer than they were in the first editions which we possess though we admit that our last is not recent

We have delved into these two volumes as our fancy led us and in each case have found what we wanted On the practical side such precise directions are given that, not being a surgical specialist we could yet treat our patient until we could get him to a surgical specialist and on the other hand, being a surgeon obtain useful promise directions that, with our previous practice, render us competent to compete with all surgical procedure

On the question of Causation Signs and Symptoms, Complications and Prognosis the information is very full indeed, so that the statement that the work is produced for students and practitioners should be enlarged so that it is clearly understood that it is not an examination book for students or a reference book for practitioners but for each it contains theory which of intent leads to the practical surgical procedure whose object is the cure or amelioration of the condition and the comfort and well being of the patient the aim of all surgery

[illegible]S AND NO[illegible] TREATMENT OF THE DISEASES OF THE COLON AND RECTUM By Reginald Schwartz M D Professor, Gouverneur Cuba, Head Visiting Department Kaiserin Elizabeth Hospital, Vienna Honorary Member Vienna Roentgen Ray Society &c , Jacques Goldberger M D Consulting Physician Carlsbad, and Charles Crosker M D , New York, N Y 1937 540 pp with 246 illustrations and 9 coloured plates London H K Lewis and Co Ltd Price 40s net

How often, when we have a case of chronic ulcerative colitis, amœbic dysentery, spina of anus constipation when we have exhausted our own lines of treatment, do we search for other methods which may be of use to our suffering patient The authors of this excellent volume which we have under review have made use of the already existing and recent knowledge of European and American Medical Schools on the subject of diseases of the colon and rectum and the result is a handy book of reference which is extraordinarily complete without being unnecessarily verbose

Short chapters are given to the anatomy physiology and physical examination of those parts followed by a description of the methods of laboratory examination of the faeces, with clear illustrations of structures found to normal and to pathological conditions

Full descriptions are given of methods of proctosigmoidoscopy These include the use of the author's "deplicaptic proctosigmoidoscope which has surmounted some of the difficulties in the optical examination of the bowel giving increased field of vision and distending the intestine in such a way that the physiological conditions of the gut and of the mucous surface are not altered There are several beautiful coloured plates which show clearly the detailed and natural picture obtained by this method

It is said that the most potent factor in the advance of diagnosis and treatment of diseases of the large bowel has been the improvement which has taken place in x ray technique in recent years As the authors say, colonic diagnostics are utterly impossible without roentgenic examination The chapter on this subject contains a review of the entire subject matter from the rich material furnished by Dr Schwartz Each disease entity is discussed in turn and the subject is illustrated by about 120 clearly detailed x ray pictures

The chapters on treatment are confined to non surgical measures They commence with a description of general methods giving, later, fuller details of all varieties of treatment which may be of use in these conditions

Though this book is expensive we realize that it could not be produced at a cheaper price without losing many of its illustrations and x ray pictures It can be thoroughly recommended to the Naval Medical Officer who is so often called upon to treat acute and chronic diseases of the large bowel

DISEASES OF THE NOSE, THROAT AND EAR. By I Simson Hall, M B Ch B F R C P Edin , F R C S Edin Surgeon to the Royal Infirmary, Edinburgh (Department for Diseases of Nose Throat and Ear) Lecturer in Diseases of Nose, Throat and Ear, University of Edinburgh First Edition 1937 Pp 423 Illustrations 55 Plates I Edinburgh E and S Livingstone 16 and 17, Teviot Place Price 10s 6d net, postage 6d

In this book the author has attempted a most difficult feat He has tried to provide students and practitioners with the essentials of this subject in as concise a form as possible while at the same time producing a book that is easy to read We think he has been most successful We had, however some minor points of dispute

In the section on the "Nose" sufficient emphasis is laid on the desirability of evacuating a septal hæmatoma so as to avoid complications In the description

[illegible] of submucous [illegible] picks cons[illegible] [illegible] sells [illegible] and lubricated [illegible] should be [illegible] nostril [illegible] the operation This procedure has been [illegible] operators [illegible] trying for the point [illegible] [illegible] the [illegible] seems to produce just as good result [illegible] that most [illegible] anaesthesia for the nose may be provided [illegible] with a strong cocaine solution [illegible] [illegible] given to the student [illegible] to find the ganglion

The author very rightly [illegible] the importance of familial infection in the [illegible] of adenoids

A useful description of the [illegible] tonsil dissection is given [illegible] [illegible] neglect of the all important question of what cases need tonsillectomy

The illustrations throughout the book are on the small side

The sections on the "Ear" and "Larynx" are the best in the book

DIATHERMY INCLUDING DIATHERMOTHERAPY AND OTHER FORMS OF MEDICAL AND SURGICAL ELECTROTHERAPEUTIC TREATMENT By Elkin P Cumberbatch M A B M Oxon, D M R E Camb F R C P Medical Officer in charge [illegible] Electrical Department and Lecturer on Medical Electricity, St Bartholomew's Hospital London With nine collaborators Third Edition 1937 Pp 576 Illustrations 183 London William Heinemann (Medical Books) Ltd Price 21s net

This textbook on Diathermy is essentially written for doctors in charge of massage and electro-therapeutic departments in hospitals, but it also has chapters that are of great interest and help to both the physician and the surgeon

As a textbook it is easy to read and understand, the illustrations most of which are diagrams are simple as well as straightforward and in the case of diagrams of electrical apparatus this is an important point as in many textbooks the diagrams are so complicated that only the expert electrician can understand them

The chapter on short wave therapy is extremely interesting, the argument for and against this line of treatment being briefly and clearly stated without bias thus leaving the reader to form his own judgment It would be an added advantage if the number of cases quoted were larger, e g in the treatment of [illegible] by ultra short wave diathermy a series of five cases only is quoted this seems hardly enough to make a decision on the merits of the treatment In this chapter there is an excellent diagram of the megatherm ultra high frequency current generator its use in the treatment of carbuncles and furunculosis is stated admirably

To physicians the chapter by H Wallace Jones, M D Liverpool will probably be the most valuable and interesting part of the book In this chapter the treatment of hypertension and angina pectoris by both diathermy and short wave therapy is given in detail and the reasons why the short wave therapy is more successful in angina and less so in hypertension

There is also a chapter showing the work being done in the U S A to cure general paralysis of the insane and disseminated sclerosis by means of Inducto therapy

The treatment of the different types of arthritis and fibrositis by diathermy is gone into very fully, and there can be no doubt as to its value in the treatment of these conditions

The chapters on electrodesiccation show the great value of this form of treatment for warts and naevi The reader may perhaps wish more details as to the strength of current employed, but the author points out that electrodesiccation is

[illegible] can only be [illegible] by experience A very good [illegible] laid great stress on the [illegible] results and this [illegible] be of great interest [illegible] Emphasis is laid on the lesson [illegible] post operative pain and [illegible] risk of re [illegible] malignant disease

Not such a good case is made out for tonsil destruction by diathermy the long period of treatment required and the risk of secondary hæmorrhage are definite disadvantages

It is quite certain that this book will be of great value to all doctors who are interested in electrotherapeutics and will be a very welcome addition to the library of all hospitals which possess an up to date massage department and a staff anxious to increase the number of patients who can be cured or improved by diathermy treatment

Anatomy and Physiology of Physical Training By Major R W Gillespie D S O, M B Ch B, R A M C Hygiene Specialist Army School of Physical Training 1925 1928 and 1933 1936 With an introduction by Professor E P Cathcart LL D M D D Sc, Regius Professor of Physiology University of Glasgow First Edition 1937 Pp 158 Illustrations and diagrams 12 London Edward Arnold and Co Price 6s net

There have been many well known treatises on anatomy and physiology but there have been few handbooks on physical training and there have been few in which the words describing elementary anatomy and physiology in such a manner that the subject becomes easily comprehensible to the layman

This is what has been accomplished in this book and the author is to be congratulated on having made a valuable contribution to the literature dealing with the elementary side of these subjects

The old idea of physical training was to develop the muscular system without thought for the general requirements of the body and if the result was a human being with mighty muscles and a huge chest, irrespective of its range of movement then the main object was thought to have been accomplished

Fortunately however the modern concept of course much further than those somewhat primitive ideas The muscles are certainly developed but only as an integral part of the whole body and in conjunction with the development and training of all the other systems so that all work together efficiently and in correct sequence and a healthy trained body results

The author has explained these basic very clearly the various subjects are well introduced and discussed and all the necessary ground has been well covered Especially valuable is the chapter on corrective exercises details of which are often difficult to find in the usual textbook

The book is illustrated with many useful and interesting photographs and diagrams whilst at the end are five appendices, the first of which gives a list of selected exercises, arranged in the correct physiological sequence

This should prove a most valuable textbook for all actual and would be instructors of physical training and it is essentially composed for them but it should also be of help and interest to all medical officers both service and civilian who are brought into contact with this type of work

This book is small well drawn up and clearly printed and extremely easy to read and understand

New 1937 Medical Catalogue

We have received from Messrs E and S Livingstone publishers of 16 and 17, Teviot Place Edinburgh their new catalogue entitled Latest List of Livingstone Publications

It has fallen to our lot to review many medical works which have [illegible]

[illegible] in the main kind, in every case we have been impressed by the [illegible] presentation of the material. Clear clean print and accurate illustrating do make for ease in reading, more especially when close study is necessary. From the point of view of publication we can therefore, clearly recommend the Livingstone publications.

Naturally, we each have our own views on authors and on the subject matter which we require. A glance through this catalogue will show a range of authors and of subject matter which cannot fail to include what each requires. We can readily imagine anyone looking through this catalogue without finding the immediate need for one or more of the books there listed—which incidentally, includes a section New Books in Preparation.

This catalogue will be sent, free of charge, to any part of the world on application to the publishers, whose address is given above.

# News of the Service.

## A NAVAL CENTENARIAN

SURGEON IN THE FIRST BOXER

[illegible] Samuel Cross R.N. retired was 100 years in May 1947. He shares with [illegible] Tuller R.N. retired the distinction of being the only surviving officers of the [illegible] born in the reign of William IV. Mr Taylor attained his hundredth anniversary [illegible]

He entered the Navy as an Assistant Surgeon on May 11 1839 at the age of 22. He [illegible] F.R.C.S. Eng. on May 30 1845. He next ship was the *Endymion* Flagship [illegible] the Mediterranean and the American and West Indies Station. From 1861 to [illegible] H.M.S. *Dauntless* Guardship at Southampton Water and at the Cape of Good [illegible] he was at H.M. Naval Hospital and also in the Morning paddle frigate. In [illegible] took up became Medical Officer of the Royal Marine Division at Woolwich, which [illegible] 1869 when that post at Hull was opened. He was afterward with the Royal [illegible] at Portsmouth. [illegible] 1870 [illegible] H.M.S. Ilaw — He first managing [illegible] for he joined H.M.S. *Excellent* [illegible] in our Schoolship about the time that [illegible] Lewis Beaumont and Sir Reginald Custance were training the officers qualifying as [illegible] He retired as staff surgeon on January 29 1874 and has since drawn his [illegible] next three years.

## ADMIRALTY ORDERS

***502.—Promotion Examination for Rank of Surgeon Commander—Result**

(M.D.O./C.W. 2722/37.—25.9.1937.)

The following officers qualified at the examination for promotion to Surgeon Commander [illegible] recently:—

Surgeon Lieut.-Commanders F. G. B. Crawford, M.B., B.Ch.
D. A. Newbery, M.R.C.S., L.R.C.P.
*H. J. Keevil, M.B., B.Ch., D.T.M.&H.
F. Dolan, M.B., B.Ch.
F. W. Besley, M.R.C.S., L.R.C.P.
*T. L. Chatta, M.R.C.P.Lond., M.R.C.S.

The officer marked * qualified for accelerated promotion.

**503.—Dental Standard for Shipwrights**

(N. 1480/37.—25.8.1937.)

It has been decided that, as a temporary measure, the reduced dental standard applicable to candidates for the Air Force Branches authorized by A.F.O. 1691/36 is to apply also to candidates for the Shipwright Branch.

2. A.F.O. 1691/36 is to be amended.

**836.—Admission of Royal Air Force Personnel to Naval Hospitals and Sick Bays—Procedure and Medical Records**

(C.W. 757, 1st.—25.11.1937)

The following procedure will be adopted in regard to medical examination of sick and injured personnel of the Royal Air Force when such personnel are admitted to Naval hospitals and sick bays.

(1) R.A.F. Form 458, the Medical History and Report Sheet, and R.A.F. Forms 39 and 41, Casualty Cards, will be used. Other forms, as provided for in existing instructions, will also be used for discharging, invaliding, transferring, and for the purchase of kit, treatment, hospitalization, and appliances, and of spectacles. Financial transactions will be conducted on the usual lines.

(2) When a man is brought before a medical board from a Naval hospital or sick bay, the Form 458 available at the time will be used. When an officer or man is admitted to hospital or sick bay, a Form 458 will be opened and the following details entered:—

Personal particulars, as set out in Section I of Form 458, will be completed by the person concerned, who will then be required to sign the declaration at the foot of Section I.

(3) R.A.F. Form 458, Section II, will be completed with the following information:—

(a) Medical history, as recorded on the Medical Board Form, Section II, or, if available, on the Medical Board Proceedings.

(b) Findings of the Medical Board, as recorded on the Medical Board Form, Section III, or, if available, on the Medical Board Proceedings.

(c) When an officer or man is admitted to hospital or sick bay for medical treatment, the name of the hospital or sick bay, and the date of admission, will be entered in Section II of Form 458.

(4) When a man is brought before a medical board from a Naval hospital or sick bay, the Form 458 available at the time will be used. When an officer or man is admitted to hospital or sick bay, a Form 458 will be opened and the following details entered:—

Personal particulars, as set out in Section I of Form 458, will be completed by the person concerned, who will then be required to sign the declaration at the foot of Section I.

(5) (a) R.A.F. Form 39 will be used for the medical history and report sheet, and Form 41 for the casualty card. When an officer or man is admitted to hospital or sick bay, a Form 39 will be opened and the following details entered:—

(b) Particulars of the man's unit, as recorded on Form 39, will be entered in Section IV, Part 1, of Form 41.

(c) Particulars of the man's unit, as recorded on Form 39, will be entered in Section IV, Part 1, of Form 41.

(6) Complaints, Forms 39 and 41, will be completed and handed to the officer or man as soon as possible. Diagnosis will be recorded on the Notification of Disease Card (Form 1171) as soon as the diagnosis is established. Particulars will be entered in the Casualty Register (Form 1180) and the Casualty Card (Form 1181) will be completed and handed to the officer or man as soon as possible.

(7) When a man is transferred from a Naval hospital or sick bay to a Royal Air Force unit, the following documents will be forwarded to the unit:—

(a) Medical History and Report Sheet, Form 458.

(b) Casualty Card, Form 41.

(c) Medical Board Proceedings, if any.

(d) Notification of Disease Card, Form 1171, if a diagnosis has been established.

(8) When a man is transferred from a Naval hospital or sick bay to a Royal Air Force unit, the following documents will be forwarded to the unit:—

(a) Medical History and Report Sheet, Form 458.

(b) Casualty Card, Form 41.

(c) Medical Board Proceedings, if any.

(d) Notification of Disease Card, Form 1171, if a diagnosis has been established.

(9) When a man is transferred from a Naval hospital or sick bay to a Royal Air Force unit, the following documents will be forwarded to the unit:—

(a) Medical History and Report Sheet, Form 458.

(b) Casualty Card, Form 41.

(c) Medical Board Proceedings, if any.

(d) Notification of Disease Card, Form 1171, if a diagnosis has been established.

(10) When a man is transferred from a Naval hospital or sick bay to a Royal Air Force unit, the following documents will be forwarded to the unit:—

(a) Medical History and Report Sheet, Form 458.

(b) Casualty Card, Form 41.

(c) Medical Board Proceedings, if any.

(d) Notification of Disease Card, Form 1171, if a diagnosis has been established.

(11) When a man is transferred from a Naval hospital or sick bay to a Royal Air Force unit, the following documents will be forwarded to the unit:—

(a) Medical History and Report Sheet, Form 458.

(b) Casualty Card, Form 41.

(c) Medical Board Proceedings, if any.

(d) Notification of Disease Card, Form 1171, if a diagnosis has been established.

(12) When a man is transferred from a Naval hospital or sick bay to a Royal Air Force unit, the following documents will be forwarded to the unit:—

(a) Medical History and Report Sheet, Form 458.

(b) Casualty Card, Form 41.

(c) Medical Board Proceedings, if any.

(d) Notification of Disease Card, Form 1171, if a diagnosis has been established.

(d) [illegible] are regarded [illegible] Whe [illegible] due to [illegible] of the year [illegible] discharges [illegible] new [illegible] will [illegible] complete [illegible] the new year.

(e) [illegible] will be divided [illegible] parts.

[illegible] admitted [illegible] which the original serial number [illegible] and the date of admission [illegible]

[illegible] the 1st January of which [illegible]

[illegible] compiled from [illegible]

[illegible] for a medical board [illegible]

[illegible] the annual medical examination [illegible]

[illegible]

**607.—Accidents to Personnel in Public Thoroughfares, etc., resulting in the Loss of their Services—REPORT**

(N. 5181/37.—25.8.1937.)

Whenever an officer or man of the Royal Navy or Royal Marines is absent from [illegible] in consequence of injury sustained as a result of an accident for which some other person [illegible] outside the Naval Service may reasonably be held responsible, the Commanding Officer of the ship or establishment on which the officer or man is borne for pay [illegible] the occurrence to the Secretary of the Admiralty. In preparing the report, the [illegible] in charge of the case should be communicated with as necessary, but where [illegible] civilian medical practitioners are concerned they should not be [illegible] to furnish essential information which is not available [illegible] establishment. Care [illegible] taken [illegible] lengthy reports likely [illegible] public funds.

[illegible] report, which in the case of Naval ratings and non-commissioned officers [illegible] should be compiled by a member of the [illegible] ship or hospital [illegible] should be in the following form:—

(a) Name and particulars of person injured.

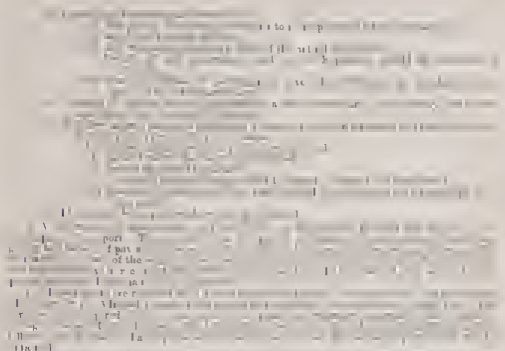
(b) Nature of injuries sustained and estimated duration of absence from duty [illegible] date of [illegible]

(c) Date and time of accident.

(d) [illegible] accident (giving names of streets, etc.).

(e) Whether injured person was on leave or duty (if on leave, state time and date leave was due to expire; if on duty, nature of same).

(f) [illegible] took place, collision, cause, and also estimated speeds of vehicles [illegible] condition of roads, state of weather, etc.) to be furnished [illegible] statement signed by the injured person, and date witnessed [illegible]



(... 1936 ... 7.)

**630.—Novox Resuscitation Apparatus**

*H.M. Ships.*

(D. 16/1.17.—2.1.1937.)

The Novox Resuscitation Apparatus in the Sick Bay of H.M. ... weather and consequently has been deranged. Arrangements the apparatus in the Sick Bay the work involved being carried ... in commission.

**641.—Form M.142—Abolition**

(M.D.C./Sta. 250/36.—15.3.1937.)

The following has been abolished:

Form M.142 Medical Officers and Sisters Daily Diet.

**663. Queen Alexandra's R.N. Nursing Service—Messing Contribution**

(C.I. 243 R.—1.4.1937.)

The rate of messing contribution payable by Sisters ... who are subsisted at the ... expenses is to remain at 2s. 3d. a day or 15s. 9d. a week until further notice.

### *738.—Sick Berth Attendants—Qualifications for Progressive Pay

(N 4383/37.—15.6.1937.)

[illegible] to the concessions to payment [illegible] to pay to Sick Berth Attendants [illegible] age are now required to pass [illegible] to qualify for Leading Sick Berth [illegible] they can only be regarded as passed in all [illegible] the leading rate when they [illegible] and the professional examination [illegible] higher rate.

[illegible] Sick Berth Attendants who [illegible] years service after the issue of K.R. [illegible] pass both examinations [illegible] they are eligible to be paid at a higher rate [illegible] go when an increase [illegible] pay under previous regulations [illegible] and in [illegible] before being eligible [illegible] payment of the [illegible] after 6 years' [illegible] [illegible] pay to Sick Berth Attendants [illegible] entitled thereto to come forth [illegible] to be overcredited are to be reported in the Director of Navy Accounts [illegible] will be given when [illegible] instances will have already been dealt with [illegible] the Admiralty.

[illegible] Sick Berth Attendants should take [illegible] before being examined [illegible] Leading Sick Berth Attendants.

*(Cf. and cf. Ipgt. XIII, Int. 1, No. 10, and 110.)*

### *739.—Sick Berth Staff—Efficiency Medal

(N 3185/37.—15.6.1937.)

[illegible] Long Service Efficiency Medal for 1937 has been awarded to Sick Berth [illegible] Warrant Officer's Mate (O.) 1828/27, Chief Mate Pool Division.

[illegible] Warrant Officers, Chief Petty Officers and Petty Officers may be recommended for the [illegible] for 1938 for their services in 1937.

[illegible] forwarding recommendations is published in the Appendix to the Navy [illegible] page [illegible] of this issue, 1936.

### 742.—Venereal Disease

(N 2043/37.—15.6.1937.)

[illegible] did [illegible] the date and the advancement [illegible] rating as [illegible] [illegible] and confirmation in the rating held on probation under Article 407 [illegible] Naval Admiralty Instructions, are to be withheld for a rating so guilty suffering [illegible] a [illegible] mendation for transfer to the Regulating Branch is normally to be [illegible] rating.

[illegible] to bring to the notice of the Fleet the fact that [illegible] on entering the Naval Service as an offence against the Naval Discipline Act [illegible] Voluntary treatment from civil practitioners will not expose [illegible] will be regarded as a first [illegible].

### 926.—Vaccination and Re-vaccination Inoculation

(M.D. 30[illegible]/37.—6.1937.)

The attention of Medical Officers is directed to the importance of complying with King's Regulations and Admiralty Instructions, Article 3417, Chapter 25 (X.).

[illegible] the practical value to the Profession of Pathology in the manufacture and [illegible] vaccine and inoculated unless it is informed of the date of issue as stamped upon each bottle of [illegible] to enable it to withdraw the unserviceable vaccine when reported.

[illegible] future a bottle of vaccine will be stamped on the label in addition to the date. This [illegible] is to be quoted in the monthly vaccination return.

### *1119.—Gilbert Blane Medal—Award

(C.W. 5196/37.—3.6.1937.)

Will [illegible] in A.O. 2509/36, the Gilbert Blane Medal for the year 1937 has been [illegible] Surgeon Lieutenant W. J. Forbes Gould, M.D., Ch.B., R.N.

### 1173.—Form M. 171—Abolition

(Stn. 60/37.—7.6.1937.)

Form M. 171—Record of X-Ray Apparatus—has been abolished and is to be deleted from [illegible] List of Medical Forms.

## MARRIAGE

[redacted] On April 1 1937 at H M [redacted] Bermuda by [redacted] assisted by the Rev H F [redacted] A [redacted] William George [redacted] R N only son of Dr and Mrs C H La [redacted] Withington [redacted] only daughter of Dr F A Coghlan C B E and Mrs [redacted] Chester

## OBITUARY

We regret [redacted] following deaths which have occurred since our last issue and [redacted] deepest sympathy [redacted]

Inspector [redacted] Major MARIUS D S O Royal who died [redacted] 1937 was born [redacted]

He received [redacted] at University College and obtained his qualification [redacted] Medical Service of [redacted] Expedition Company in 1864

He joined [redacted] Royal Navy in 1867 and proceeded [redacted] Royal Naval Hospital Haslar [redacted]

In the [redacted] he was appointed to H M S *Narcissus* [redacted] Depot at La Plata [redacted]

He [redacted] H M S *Shannon* and [redacted] Naval Brigade [redacted] Mentioned in Despatches [redacted] Fungkai [redacted] R N [redacted] Medal and Medal to Bugler.

He was promoted [redacted] 1881 and [redacted] Staff Surgeon in 1891 [redacted] Naval Brigade [redacted] Despatches [redacted]

He was promoted [redacted] in 1900 and retired at his own request in May 1901

---

SURGEON CAPTAIN [redacted] January 15 [redacted] 1862 He received [redacted] Edinburgh [redacted] 1885 and was appointed to R N Hospital Haslar [redacted]

He subsequently [redacted] Royal Naval Hospital [redacted] R N Hospital Plymouth [redacted] Royal Naval Air Service [redacted] Air Force [redacted] Pharmacist [redacted]

He was placed on the Retired List on promotion [redacted] and was commanded [redacted]

He was [redacted] for the [redacted] Distinguished Service Cross [redacted]

---

SURGEON CAPTAIN EDWARD CARLETON [redacted] R N (retired) died [redacted] January 1937 [redacted] born [redacted]

He received [redacted] medical education [redacted] and during the South African War [redacted] qualified as [redacted] M B B S [redacted] In 1901 he entered the Royal Navy [redacted] 1899 and was appointed to R N Hospital [redacted] and [redacted] 1902 was appointed to H M S *Talbot* [redacted]

He subsequently [redacted] H M S *Shannon* [redacted] Dreadnought [redacted] Duke and Highland [redacted] Medal [redacted] Naval War [redacted] Mediterranean [redacted] Malta [redacted] Invincible [redacted] R A F [redacted] Tregantle [redacted] R A [redacted]

He was placed on the Retired List [redacted] with the rank of Surgeon Captain

---

SURGEON [redacted] Hunter [redacted] Royal Navy [redacted] 1874 and [redacted]

He received his medical education [redacted] Glasgow and [redacted] M R C S Eng *L R C P* Lond in 1899

He joined the medical branch of the Royal Navy in 1897 and proceeded to Royal Naval Hospital Haslar for the naval course [redacted] on the completion of which he was appointed to H M S *Royal Arthur* [redacted]

He served in H M S *Royal Irish* until August 1906 when he was transferred to H M S *Torch* serving on the same station. While serving in H M S *Torch* he was engaged [redacted] operations at Samoa [redacted] commended for his good service

[illegible] Hospital and [illegible] [illegible]

[illegible] 1927 [illegible]

[illegible] Glasgow [illegible] the qualif[illegible] [illegible] degree of M.D. in 1912 [illegible]

[illegible] the Royal Navy [illegible] [illegible] appointed [illegible]

[illegible] R.N. Hospital [illegible]

[illegible] Officer [illegible]

[illegible]

[illegible] Royal Navy [illegible] Surgeon [illegible] H.M. Dockyard, Sheerness [illegible] placed on the retired list [illegible]

[illegible] Royal Naval Nursing Service [illegible] Hospital, Malta [illegible] Miss Edmonds entered [illegible] February [illegible] at home and at Malta [illegible]

[illegible] will be a great shock to many. A good [illegible] irreparable loss to all who knew her.

## HONOURS

[illegible] Biskeridge, D.S.O., M.R.C.S., L.R.C.P., D.P.H., to be [illegible] of the Bath (Military Division) C.B.

[illegible] M.B., Ch.B., to be Commander of the Military Division [illegible] Empire (C.B.E.).

[illegible] to be Officer of the Military Division of the Most [illegible] (O.B.E.).

[illegible] M.B., Ch.B., to be Officer of the Military Division of the [illegible] (O.B.E.).

## RETIREMENTS

[illegible] M.B., placed on the Retired List at own request, with [illegible]

[illegible] O.B.E., placed on the Retired List at own request, with [illegible]

## PROMOTIONS

## APPOINTMENTS

### Marc t

### Vet t

[redacted]

Surgeon ... to be Medical Director-General of the Navy, with the rank of Surgeon Vice Admiral, dated 1st May 1937.

Surgeon ... to be Medical Director-General of the Navy, with the rank of Surgeon Rear Admiral, dated 1st May 1937.

## TRANSFERS TO PERMANENT LIST

Surgeon Lieutenants H. J. Bennett, M.B., B.S., J. W. Caswell, M.D., D.P.H., L.C.P. & S.Edin., L.M.S.S.A., D. F. Jack, M.B., Ch.B., J. C. V. Mount-Smith, M.B., B.Ch., M.R.C.S., L.R.C.P., G. S. Thom, M.B., Ch.B., W. K. Taylor, L.R.C.P. & S., L.D.S., J. E. Davenport, M.R.C.S., L.R.C.P., W. D. Gunn, M.D., C.M., J. J. Hendle, L.M.S.S.A., G. D. Weld, M.B., B.Ch., E. James, M.B., Ch.D., M.R.C.S., L.R.C.P., W. A. S. Grant, M.B., Ch.B.

## ENTRIES

Messrs. C. I. Hardman, M.R.C.S., L.R.C.P., J. F. Mounsell, M.R.C.S., L.R.C.P., W. B. Jelleyes, M.B., B.Ch., and W. S. Parker, M.B., B.S., M.R.C.S., L.R.C.P., entered as Surgeon Lieutenants (Ex Short Service) and appointed to R.N. Hospital, Haslar (for course of instruction), April 1, 1937.

Messrs. J. B. Knight, L.D.S., and E. B. Gambles, L.D.S., entered as Surgeon Lieutenants (D) for Short Service and appointed to R.N. Hospital, Haslar (for course of instruction), May 18, 1937.

## WARDMASTERS

### HONOUR.

To be Commissioned Wardmaster, P. R. Saffin, to be Member of the Military Division of the Most Excellent Order of the British Empire (M.B.E.)

## ROYAL NAVAL VOLUNTEER RESERVE

### APPOINTMENT

MAJOR

Surgeon Lieutenant-Commander C. Seglow, M.B., B.S., to be Fleet Surgeon.

### RESIGNATIONS

MAY

Surgeon Commander C. C. Pfeiffer to H.M.S. Barracks, Devonport, 11 May 1937.

W. C. Macaulay to Royal Sovereign. E. C. D. Dunstan to Royal Arthur. W. H. Bayne to Victory. S. W. Davidson to H.M.S. Pembroke. Hasler. F. L. Cassell to H.M.S. Britannia. [illegible] Palmer to Revenge. R. Hall to Hibernia.

Surgeon Lieutenant-Commander H. M. Waugh to Victory. C. H. M. F. Mead. R. L. Sinclair to Vernon. A. Hall to H.M.S. Hospital Haslar. C. Mayes to Victory. A. Mayes to Keyham. J. L. Cope to Calliope. R. W. H. Ingleby to Victory. W. Aitken to Formidable. D. Nelson to Emerald. A. R. Thomas to Glorious. W. Lamb to Shannon. R. Inglis to Cumberland. R. H. Bland to Hermione. S. H. Smithwick to Europa.

Surgeon Lieutenant-Commander (D) R. I. Dalton to Victory. J. Swanston to Excellent. C. Ison to Victory. D. T. Thomson to Victory. J. S. Ross to Victory. W. Jones to Drake. G. Knight to Calypso. P. H. Jones to Victory. J. I. Minett to Egmont. H. S. Hallett to R.N. Hospital, Haslar. H. Jones to R.N. Hospital, Haslar. R. J. Wade to R.N. Barracks, Portsmouth. W. H. Cross to Victory.

Surgeon Lieutenant-Commander A. C. Fullo to Royal Sovereign.

Surgeon Lieutenant-Commander (D) R. Hannah to Victory. J. H. Hall to Victory. T. D. J. Wilson to Victory.

Surgeon Lieutenant R. F. Bland to Victory. R. H. Hall to Victory.

JUNE

Surgeon Lieutenant-Commander D. M. Craig to Victory. H. W. Brown to Victory. Wyndham J. Acworth to Victory.

Surgeon Lieutenant-Commander (D) C. A. D. White to R.N. Hospital, Haslar.

### PROMOTIONS

Surgeon Lieutenant-Commander S. B. Bashwick, M.P., C.B.E., to be Surgeon Captain, 1 June 1937.

Surgeon Lieutenant T. Lamb to be Surgeon Lieutenant-Commander, 1 March 1937.

Surgeon Lieutenant (D) H. S. Hyslop to be Surgeon Lieutenant-Commander (D), 1 December 1937.

Probationary Surgeon Lieutenant H. K. Sargent to be confirmed in rank, 1 May 1937.

Surgeon Sub-Lieutenant P. H. K. Sargent, to be Surgeon Lieutenant, 1 May 1937.

Surgeon Sub-Lieutenant R. F. Hall to be Surgeon Lieutenant, 1 May 1937.

Surgeon Sub-Lieutenant C. E. Inglis, R.C.N., to be Surgeon Lieutenant, 1 May 1937.

[illegible] Naval Nursing Service

[illegible] Naval Hospital

[illegible] mander (D) R E Rob[illegible] [illegible] Hospital Lee[illegible]

[illegible] mander (D) L P Monk [illegible] Naval Hospital Lee[illegible]

[illegible] mander (D) L D Collins [illegible] 1937

[illegible] S Talbot Lorch assistant [illegible] ntry to R N [illegible]

ENTRIES

Donna [illegible] M S V I R O C [illegible] Sister [illegible]
[illegible] District April 15 1937

## QUEEN ALEXANDRA'S ROYAL NAVAL NURSING SERVICE

HONOUR

Matron Miss N L James awarded R R C First Class

ENTRIES

Miss Winifred May Barker entered as Nursing Sister on probation and appointed to R N Hospital Haslar May 10 1937

Miss Enid Mary Blair entered as Nursing Sister on probation and appointed to R N Hospital Haslar April 12 1937

Miss Claudine Randall Kempson entered as Nursing Sister on probation and appointed Hospital Plymouth May 6 1937

Miss Dorothy Dowsett entered as Nursing Sister on probation and appointed to R N Hospital Haslar April 24 1937

Miss Joyce Alice Davies entered as Nursing Sister on probation and appointed to R N Hospital Plymouth May 1 1937

Miss Nora Patten Booth entered as Nursing Sister on probation and appointed to R N Hospital Haslar May 31 1937

Miss Chrispatrick entered as Nursing Sister on probation and appointed to R N Hospital Haslar May 1 1937

Miss M Dennis entered as Nursing Sister on probation and appointed to R N Hospital Chatham April 24 1937

APPOINTMENTS

Acting Principal Matron Miss M P de B. Jordan to R N Sick Quarters *Caledonia* May 1

Acting Principal Matron Miss O Franklin, M B E to R N Hospital Plymouth May 6 1937

Acting Sister Miss B Nicholds to R N Sick Quarters *Caledonia* May 6 1937 Miss [illegible] to R N Sick Quarters *Caledonia* May 6 1937 Miss E M Wynne-Jones to R N Sick Quarters Bantham May 6 1937 Miss E B Tully to R N Sick Quarters

RESIGNATIONS

Acting Sister Miss H McL Paterson resigned April 21 1937

PROMOTIONS

Principal Matron Miss O Franklin M B E to be Superintending Sister, May 6 1937
Sister Miss H A Mulhall to be Senior Sister May 6 1937

## ROYAL NAVY MEDICAL CLUB

The twenty third Annual Dinner took place at the Trocadero Restaurant [illegible] Circus W 1 on Friday April 16 1937 The President of the Club Vice Admiral Sir Basil Hall K C B C B E K H P presided over a record [illegible] attendance of members and guests On the occasion three toasts The King The Club and The Medical Director General were pledged

After proposing the toast of The Club the President said Last year unfortunately it was necessary to abandon our dinner owing to the lamented death of H M King George V This record gathering over which I have the honour to preside to night is a testimony to the popularity of our dinner and compensates for the gap in the sequence It has been thought desirable to continue the experiment begun two years ago of making the dinner less formal

[illegible] being [illegible] than for [illegible] meet the [illegible] perhaps but [illegible] majority

Letters [illegible] attend the [illegible] enjoyable evening [illegible] from Sir [illegible] Sir Reginald [illegible] other members [illegible] very welcome [illegible]

Financially the Club [illegible] healthy [illegible] the Balance Sheet that [illegible] current account—an increase [illegible] During that period 32 [illegible] to note are junior officers [illegible] too strongly emphasised that [illegible] acquisition of new junior members [illegible] the Active List both R.N. and R.N.V.R. [illegible] hope that many more of [illegible] membership

On the darker side of the picture [illegible] numbers and in quality [illegible] were members of this Club [illegible] Porter Chambers Doyne Bishop [illegible] known to nearly all of you [illegible]

That very worthy institution the Naval Medical Compassionate Fund continues its invaluable work [illegible] approximately [illegible] 17 beneficiaries [illegible] Out of the 30 members of our [illegible] deceased [illegible] to the Fund

It is customary for the President to give a [illegible] have occurred since the last dinner. Of these the [illegible] personnel are, perhaps the most interesting

Concurrently with the general expansion of the Navy the establishment of the Medical Branch is being increased gradually. Obviously, the [illegible] must vary according to the [illegible] When I last [illegible] I had the great satisfaction of telling you of [illegible] entry. I am happy to say that this has been [illegible] and I hope that [illegible] firmly established with consequent advantage to the Service and to the individual Medical Officers. The quality of the [illegible] is high—professionally, socially and athletically. The Medical Branch and the Dental Branch [illegible] excellent officers. We congratulate [illegible]—Surgeon Lieutenant B. M. Goldsworthy on having obtained Navy caps against the Army and the Air Force, and Surgeon Lieutenant M. [illegible] Hough who has played golf for the Navy. An interesting and I think [illegible] innovation is the [illegible] the batch of [illegible] training at the R.N. School immediately after their [illegible] Haslar. In this connection the appointment of a Medical Officer to the R.P.T. School has been restored. The officer selected takes the long P. and R.T. course and goes to Aldershot for [illegible] at the Army Physical Training Centre

A very definite effort has been made to select and train young officers [illegible] specialist subjects. The [illegible] of the last two years have [illegible] us considerably and delayed the adoption [illegible] full programme but I am satisfied that a great advance has been made and that later the Branch will reap the benefit. The Promotion Course has been simplified and, I think, improved by omitting the special subjects and confining the instruction and examination to general medicine, surgery and hygiene. I must [illegible] on a very valuable addition to our facilities for Postgraduate Study. I have been able to arrange with the

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]



## NAVAL MEDICAL COMPASSIONATE FUND

# Notice.

CALCIUM GLUCONATE AND [illegible]

[illegible] ns which arise from a defi[illegible]
[illegible] lconate and Iron (Effervescent)
[illegible] l Co Snow Hill Build[illegible] One
[illegible] f water makes an effervescent [illegible] 20 gr
[illegible] [illegible] n of iron and ammonium citrate.

[illegible] physiological demand for calcium and [illegible] in adults
[illegible] [illegible] in the dietary supply is suspected but where no
[illegible] [illegible] anifestations have been observed Another suggested use of
[illegible] Gluconate and Iron (Effervescent) is during pregnancy and
[illegible] [illegible] ce the demand for calcium and iron in order to cope with the
[illegible] [illegible] -lements by the developing foetus or infant It can be given
[illegible] advantageously over a long period to ensure an adequate supply of calcium for
[illegible] al bone formation and to replace the abnormal loss of iron during the
[illegible] pregnancy

The dosage of Tabloid Calcium Gluconate Iron (Effervescent) in pre natal cases is one tablet twice daily for a month then after the lapse of another month the treatment is resumed An alternative method is to give one product daily over a period of several months Where there is marked deficiency of lime in the water of some districts larger doses can be given with benefit

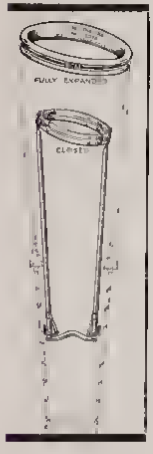
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*Advertisement*

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*by*

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VOLUME XXIII OCTOBER 1937 No 4

# Journal
of the
# Royal Naval Medical Service.

## Original Articles

### BIOGRAPHY OF SIR GILBERT BLANE (1749-1831)

PART I

*From Dictionary of National Biography Volume II* 1908

Edited by LESLIE STEPHEN and SIDNEY LEE
COMMUNICATED BY SURGEON LIEUTENANT-COMMANDER S JENKINSON RN

SIR GILBERT BLANE physician was the fourth son of Mr Gilbert Blane of Blanefield Ayrshire where he was born on 29th August (O S) 1749 At the age of 14 he was sent to the University of Edinburgh being first intended for the Church but was ultimately led to study medicine After spending five years in the faculty of arts and five more in that of medicine at Edinburgh he took the degree of M D in the University of Glasgow on 28th August, 1778 During his studentship he was elected one of the presidents of the (Students') Medical Society of Edinburgh On leaving Edinburgh Blane came to London furnished with introductions from his teacher Dr Cullen to Dr William Hunter, who recommended him as private physician to Lord Holderness and afterwards in the same capacity to Admiral Rodney, who was then sailing on his notable expedition to the West Indies in 1779 Blane won Rodney's good opinion by his professional skill and also by his personal bravery which was shown in conveying the Admiral's orders under fire in a dangerous emergency to the officers at the guns Rodney at once placed him in the important position of physician to the fleet which he occupied to the close of the war returning to England with Admiral Francis William Drake in the spring of 1783 He was present at six general engagements, and wrote an account which was published of the great victory over the French fleet commanded by the

[1] Reprinted by kind permission of the Clarendon Press

Comte d'[illegible] in 12th April 1[illegible]. He also furnished materials for Mundy's [illegible] of Rodney, and took part in a controversy which subsequently arose respecting the claims of Admiral originality in introducing into naval tactics the method of breaking the line. These, with many other proofs of Rodney's confidence, show the intimate friendship which existed between Blane and his commander. The officers of the West India fleet also marked their appreciation of Blane's services by unanimously recommending him to the Admiralty for a special recompense which he received in the form of a pension from the Crown. In 1781, when Rodney was compelled by the state of his health to come home for a time, Blane accompanied him and took the opportunity of being admitted as Licentiate of the College of Physicians on 3rd December 1781 but returned to the West India Station early in 1782.

The services which Blane rendered while in medical charge of the West India fleet and the reforms which firmly supported by Rodney he was able to introduce, were indeed of the most signal importance not only to the efficiency of the fleet, but as inaugurating a new era in the sanitary condition of the navy. Before his time scurvy prevailed to a lamentable extent among seamen so that important naval operations often failed from this cause alone. Fevers and other diseases arising from infection and the unhealthy state of ships also caused great mortality. Blane in a memorial presented to the Admiralty on 13th October 1781 showed that one man in seven died from disease on the West India Station in one year. He suggested certain precautions especially relating to the supply of wine, fresh fruit and other provisions adapted to prevent scurvy and also advocated the enforcement of stricter discipline in sanitary matters on board ship. In a second memorial (16 July 1782) he points out the great improvement effected by the carrying out of these suggestions the annual mortality having reduced to one in twenty. The health of the fleet during the latter part of Rodney's command was indeed remarkably good, and greatly contributed to its successes as was generously acknowledged by the commander himself in the following words:

> "To his (Dr Blane's) knowledge and attention it was owing that the English fleet was, notwithstanding their excessive fatigue and constant service, in a condition always to attack and defeat the public enemy. In my own ship the Formidable out of 900 men not one was buried in six months."

In 1780 Blane brought out a small book "On the most effectual means for preserving the Health of Seamen particularly in the Royal Navy." Later on in 1793, his recommendation of lemon juice as a preventive of the scurvy to Admiral Sir Alan Gardner one of the Lords of the Admiralty, produced such good results as led to the issuing in 1795 of regulations for the universal use of this article in the navy. Though Blane was by no means the discoverer of this remedy which had been known for more than

a century and had been strongly recommended by Dr Lind and others, he was the means of introducing those regulations which have entirely banished scurvy from the Queen's ships

Shortly after Blane's return to England a vacancy occurred for a Physician at St Thomas's Hospital and as he was now resolved to practise in London, he became a candidate The influence of Lord Rodney who after his brilliant victories was one of the most popular men in England, was warmly exerted on his behalf In a letter to one of the Governors Rodney bore the generous testimony to Blane's merits which has already been quoted After a sharp contest Blane was elected on 19th September 1783, by 98 votes to 84 He held this office for twelve years, resigning it in 1795

In 1785 Blane was appointed Physician extraordinary to the Prince of Wales on the recommendation of the Duke of Clarence, with whom he had become acquainted in his naval career; and afterwards became physician to the Prince's household and his physician in ordinary In 1785 also he produced the first edition of his work on the diseases of seamen which passed through several editions and attained the position of a medical classic

His Court and Hospital appointments, with other connections, appear to have procured Blane a large practice but he was more especially known for his services in public affairs, naval, military and civil

In 1795 he was appointed one of the commissioners for sick and wounded seamen a body which was virtually the medical board for the navy and held this position until the reduction of the naval and military establishments after the peace of Amiens in 1802 when his services were rewarded with a doubling of his former pension

His advice was frequently sought by the government and other authorities on sanitary and medical matters Thus in 1799 the Turkey Company, which then controlled the whole of the Levant trade consulted him about the quarantine regulations for the prevention of the importation of plague from the Mediterranean and he was called upon by the government to draw up, in conjunction with other eminent physicians the rules which formed the basis of the Quarantine Act of 1799 When the army returned from Egypt it was transported under regulations drawn up by Blane to guard against the danger of introducing the plague into this country The Home Office consulted him on a variety of subjects on the means of keeping contagious fevers out of prisons, on the mortality which arose from the same cause in ships which carried convicts to Botany Bay, &c The board of control sought his aid in framing improved regulations for the medical service in India Hardly any department of State failed to resort to Blane's advice on one occasion or another But the most important emergency on which he was called upon to advise the government was in connection with the disastrous Walcheren expedition It was felt that the critical situation of the army, owing

chiefly to the ravages of disease was eminently a question requiring medical knowledge and experience The army medical board (consisting of the physician-general and the surgeon-general, and the inspector-general) had lost the confidence of the government first through having failed to see the dangers arising from the unhealthiness of the seat of war and then by their supineness in meeting the crisis each member of the board excusing himself on various pretexts from proceeding to the scene of action (see report of evidence given before a committee of the whole House of Commons, 1810) Under these circumstances the War Office sent out Blane to report and when it was decided, chiefly on medical grounds to recall the expedition he was charged with the arrangements for bringing home the sick and wounded

This perhaps unprecedented instance of employing a naval medical officer in the work of the army department undoubtedly raised Blane's reputation, whether or no (which does not appear) it may have given rise to any jealousy He was at once liberally rewarded and thanked and received the honour of a baronetcy from the Prince Regent on 26th December 1812

On the accession of George IV Blane became one of his physicians in ordinary and filled the same office in the next reign Consultations on medico political questions and compensatory honours flowed in upon Blane from foreign countries The Emperor of Russia, the King of Prussia, and the President of the United States sought his advice and acknowledged his services In 1821 the medical officers of the navy presented him with a piece of plate In 1829 he founded a prize medal for the best journal kept by the surgeons of the Royal Navy He was a Fellow of the Royal Society a member of the Institute of France, and other learned bodies In 1821 Blane's health began to fail, but not seriously till 1834 He died on 26th June 1834 at his house in Sackville Street An unfinished portrait of him by Sir M A Shee is in the College of Physicians He married 11th July, 1786, the only daughter of Mr Abraham Gardiner and had six sons and three daughters He was succeeded to the title by his third son, Hugh Seymour Blane the two elder died previously

Blane was undoubtedly a man of great original force of character, and he became a very completely equipped physician He united in an uncommon degree adequate scholarship and considerable dialectical skill with scientific acumen and great administrative capacity He does not appear to have made any reputation as a hospital teacher, but his books are well written and full of original observations Although there is no one subject in which he made any striking discovery the general body of fact and argument in his writings constitutes an important contribution to medicine and to the science of health His tract entitled Medical Logic, intended to show the fallacies which beset medical enquiries contains a good deal of common sense with some philosophical pedantry Of his other dissertations the most important are "On the Comparative Health

of the British Navy from [illegible] (*Medico-Chirurgical Transactions* vol vi 1815) Observations [illegible] ing Intermittent Fevers, the cause of the sickness of the [illegible] Walcheren, &c (*ib* vol iii 1812) 'On the Comparative Prevalence and Mortality of different Diseases in London' (*ib* vol iv 181[illegible] He wrote also Observations on the Diseases of Seamen Lo[illegible]n 8vo 1st ed 1785 2nd ed 1790, 3rd ed 1808 (with a pharmacopœia for the naval service) 'Elements of Medical Logick,' London 1819 8vo 2nd ed 1821 3rd ed 1822) Select Dissertations on Medical Science collected London 1822, 8vo 2nd ed 2 vols 1833 including those quoted above with others namely On Muscular Motion (The Croonian Lecture read before the Royal Society 18 and 20 Nov 1788), 'On the True Value and Present State of Vaccination (also in *Med Chir Trans*, vol x 1819) On the Mechanical Compression of the Head in Hydrocephalus On the Yellow Fever &c &c 'Statement of the Progressive Improvement in the health of the Royal Navy at the end of the Eighteenth and beginning of the Nineteenth century, London 1830 8vo 'Warning to the Public on the Cholera of India London, 1831 8vo Reflections on the Present Crisis of Public Affairs 1831 8vo &c

*References* — Annual[illegible] Register of Physic [illegible] Surgical 2nd ed 1818 p 117 *London Medical Gazette* 1833 xii 488 488 [illegible] *Brit Mag* 1835 p 91 Munk's Life of Rodney 2 vols London 1830 Munk's Coll of Letts 1878 ii 92 *Annals of St Thomas's Hospital* Blane's Works

I F PAYNE M D

## PART II

*Abstract from* [illegible] *Select Naval Documents* [1]

Compiled by H W [illegible]s and I A Hutchins 1927

### MEDICAL REFORMS

No record of our eighteenth century Navy—however brief—can omit reference to the work of Sir Gilbert Blane (1749 1831) His connection with the service began in 1779, when he went to sea with Rodney as his private physician He was soon appointed as physician to the fleet and was present in six general engagements He presented two Memorials to the Admiralty on the health of the fleet, and the adoption of his suggestions led to very rapid general improvement, shown in a marked decrease of mortality

His recommendation of the supply of lemon juice for the prevention of scurvy in 1793 was adopted throughout the Navy in 1795

Gilbert Blane M D &c Observations on the Diseases of Seamen p 334 Third Edition 1799

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## MEMORIAL BY SIR GILBERT BLANE

Delivered to the Board of Admiralty in October 1781

Proposing Means for preventing the Sickness and Mortality prevailing among the Seamen of His Majesty's Squadron in the West Indies

I have for the last two years attended a squadron, consisting of seldom less than twenty ships of the line, in quality of physician to the fleet at Barbadoes and the Leeward Islands. I received, by the order of the Commander-in-Chief, a monthly return from the surgeon of each ship, setting forth the diseases, deaths, and other circumstances of the respective ships companies. I also superintended the hospital of the place where the fleet happened to lie when in port. These advantages have afforded me an intimate knowledge of the nature and causes of the sickness and mortality among the seamen, both on board of their ships and in hospitals.

It appears by my returns that there died in the course of the twelve months preceding July last on board of ships, seven hundred and fifteen seamen and marines, of whom only fifty-nine died in battle and of wounds. There died in the same time in hospitals eight hundred and sixty two: so that out of twelve thousand one hundred and nine men which is the sum total of the complement of twenty ships of the line, there have perished in one year one thousand five hundred and seventy seven, that is nearly every seventh man.

"There were also sent to England in the same year, three hundred and fifty men disabled by lameness and chronic complaints, the greater part of whom will be for ever lost to the service.

"The degree of sickness is very different at different times, but it appears by the returns that at a medium there has been one man in fifteen on the sick list.

"When it is considered that sickness is almost entirely confined to ships of two and three decks, and that some of these are as healthy as frigates and merchant ships though in the same circumstances of service with others that are extremely sickly, we are led from hence to infer that sickness is not in its own nature unavoidable, and we are encouraged to hope that the attainment of general health is within the compass of human management.

"I humbly and earnestly solicit attention to some of the most material observations and conclusions which have occurred in the course of a service which, though short, has been extensive, and whatever is here proposed has this recommendation, that it is easy, practicable, and is no addition to the public charges.

"First. I hardly ever knew a ship's company become sickly which was well regulated in point of cleanliness and dryness. It is the custom in some ships to divide the crew into squads or divisions under the inspection of respective officers, who make a weekly review of their persons and clothing, and are answerable for the cleanliness and regularity of their

severable allowance. This ought to be an indispensible duty in ships of two or three decks; and when it has been practised and at the same time ventilation, cleanliness, and dryness below and between decks have been attended to, I have never known seamen more unhealthy than other men. The neglect of such attentions is a never-failing cause of sickness.

'Secondly.—Scurvy is one of the principal diseases with which seamen are afflicted; and this may be infallibly prevented or cured, by vegetables and fruit, particularly oranges, lemons, or limes. I am well convinced that more men would be saved by a purveyance of fruit and vegetables than could be raised by double the expense and trouble employed on the imprest service; so that policy as well as humanity concur in recommending it. Every fifty oranges or lemons might be considered as a hand to the fleet, inasmuch as the health and perhaps the life, of a man would thereby be saved.

[The rest of Blane's suggestions are given in the summarised form in which he presented them at the end of the memorial.]

Thirdly. The substitution of wine for rum. (Blane's foot note. Had I then known the salutary effects of porter and spruce beer, of which I have since been convinced, I should have proposed them as substitutes for rum.)

"Fourthly. The providing of an adequate quantity of necessaries for the sick.

'Fifthly. The gratuitous supply of certain medicines.

Sixthly. The curing of certain diseases on board instead of sending them to hospitals; and

'Lastly. The preventing of filth, crowding, and the mixture of diseases in hospitals, by proper regulations and by establishing hospital ships.

"I beg leave again to call to mind that 1,518 deaths from disease besides 590 invalids in 12,109 men in the course of one year is an alarming waste of British seamen, being a number that would man three of His Majesty's ships of the line.

## Supplement to the Memorial Delivered Last Year to the Board of Admiralty (p. 334)

'Since my return to duty on this station additional experience has afforded me farther practical confirmation of the utility of the former proposals.

'The great squadron employed on this station has by the attention of the Commissioners of Victualling and also of the Commander in Chief been supplied with most of the articles recommended in such quantities as to prove their efficacy; and indeed the small degree of mortality in comparison of former times is a sufficient demonstration of this.

I beg leave to give an instance in the *Formidable* of the great and salutary effects of the proposed improvements. This ship left England

furnished [illegible] with sour kraut and molasses, in common with most others in the squadron, but what was peculiar to herself was an entire supply of good wine in place of spirits and an experiment has been made in this instance, under my own eyes to ascertain what degree of health it was possible to attain in a great ship in this climate With the above advantages together with good discipline and medical care, no man died of disease from December, 1781 to May 1782, and only thirteen were sent to hospitals, whose complaints were small pox and ulcers In the months of May and June last, when at Jamaica there died of disease in this ship three men and seventeen were sent to the hospital most of whom had contracted their sickness on board of French prizes

In the rest of the fleet the health was in proportion to the wine and other refreshments, and the cleanliness, good order, and discipline observed

In the squadron I attended the last five months, which seldom consisted, during the last three months of that time of less than forty ships of the line, there have died of disease about 350 men and about 1,000 have been sent to hospitals a degree of sickness and mortality which, though not greater than what frequently prevails in Europe, I am persuaded would have been still less had the improvements proposed been complied with in a manner more extensive and complete, and had the general rules of discipline and cleanliness been kept up with due and equal strictness throughout the fleet

*Formidable*,
at Port Royal, Jamaica
July 16, 1782

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'The sick and wounded of the Navy were first received into Haslar Hospital in the year 1754, and it was completed about two years afterwards Plymouth Hospital began first to be occupied in 1760, but was not completed till 1764

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'The most remarkable point of comparison exhibited in this table (Table showing the number of men admitted, and who have died at Haslar and Plymouth Hospitals, from year 1755 to year 1797) is that of the late war with France which lasted five years with the five by-past years of the present war (1793 7) It appears that in these two hospitals alone there were upwards of 27 000 more patients admitted in the former than the latter period though a greater naval force is now kept up than was ever known in this country and a greater proportion of it on home service than in the late war The principal causes of this seem to be

'First That the navy at the commencement of this war was manned with less impressing than on the like occasions in former wars 'The foul

[illegible] the method [illegible] already [illegible] prevailing in the beginning of [illegible]

'Secondly The greater [illegible] and dryness and the stricter enforcement of [illegible] of the convicts now entertained by officers, of the [illegible] these to the health of the men under their command

"Thirdly The general use of [illegible] only but liberally allowed to ships at sea for the [illegible]

'Fourthly' The late increase of [illegible] ing ons, and the operation of the regulations established and put in [illegible] by the medical board of the navy

p 301

"We may consider all water kept in wooden vessels as more or less liable to putrefaction but there is a substance which is neither rare nor costly that effectually preserves it sweet This is quick lime with which every ship should be provided in order to put a pint of it into each butt when it is filled In the year 1779 several ships of the line arrived in the West Indies from England and they were all afflicted with the flux, except the *Stirling Castle*, which was the only ship in which quick lime was put into the water nor does it spoil the water for any culinary purpose

p 310

"It would certainly be for the benefit of the service that a uniform should be established for the common men as well as for the officers This would oblige them at all times to have in their possession a quantity of decent apparel subject to the inspection of their superiors It would also be less easy to dispose of their clothes for money without detection, and desertion would also thereby be rendered more difficult

The greatest evil connected with clothing is the infection generated by wearing it too long without shifting for the jail hospital or ship fever seems to be more owing to this than to close air

p 137

"The great degree of health at this time (December, 1782) enjoyed by the ships company of the *Agamemnon* deserves particular attention as it seemed to be owing to a circumstance in the mode of victualling which might, without any expense and with little trouble be rendered general in the navy This consisted in the use of soft bread that ship having been supplied about this time with flour in place of biscuit For thirteen weeks the whole ships company had no bread but what was baked on board, and a certain proportion of it from that time till her arrival in England, in May 1783 at which time there was not a sick man on the list

## SOME OBSERVATIONS ON CONTROL AND TREATMENT OF CHANCROID INFECTION

BY SURGEON LIEUTENANT F. L. S. COUTTS, M.R.C.S., L.R.C.P., R.N.

THE following records are based on observations made between September 1935, and July 1936, during which period the Mediterranean Fleet and additional units were based on Alexandria. An account is given of the difficulties met with and experience gained in dealing with chancroid infection in almost epidemic form. In view of the extreme importance of this type of venereal disease in the Service as an incapacitating factor alone, an attempt is made to put forward constructive arguments in favour of an organized system of control and treatment for all ships based on a country where the disease is endemic.

Towards safeguarding the Navy some hard and effective work was performed by the local Assistant Provost Marshal, whose energy was abundant. Large areas of the town were put Out of Bounds and an attempt was made in an unofficial manner to cope with venereal infection. There is no doubt that a deal of good was done and the incidence cut down to some extent. Several ratings became infected, mainly due to misplaced confidence.

Venereal disease is still rampant in Egypt as it was in olden times. Chancroidal infections are predominant and seem to be regarded very lightly and as little more than a common cold. The attitude of the community towards the disease is pathetic and it is doubtful whether it is recognized as a venereal infection at all in some quarters. Syphilis is appreciated, and some trouble is taken to exclude that possibility when a lesion of any kind appears: but as long as the lesion proves negative the infected person is left free to spread the infection.

Within a week of the Navy's arriving at Alexandria cases of venereal disease began to appear in the Fleet. The great majority of these were chancroid in nature and of extreme severity. A number became complicated by buboes, settled down into a chronic state, and eventually found their way into hospital. For the first few weeks cases were treated on the usual lines, but after a time certain anxiety was caused when it became obvious that many cases of penile sore were being badly controlled, and that there were great differences in the routines adopted by the various medical officers in the Fleet. Note was taken of the treatment adopted on all cases previous to their admission to hospital. In the case of any penile sore of an incubation period suggesting chancroid infection the general routine appeared to be —

(*a*) S.P. tests on three successive days and salve only applied.

(*b*) If negative, local treatments of varying kinds were instituted immediately, the more favoured preparations being B.I.P.P., lotio rubra,

lotio nigra [illegible] mercuric [illegible] flavine [illegible] hydrogen peroxide, 606 A and B. This latter gave excellent [illegible] in the more simple and uncomplicated cases.

(*c*) Blood tests were done on an average seven to [illegible] days after the appearance of the sore and routinely repeated. Some were [illegible] by a provocative dose of N A B.

(*d*) Finally, in several cases N A B courses were given in spite of all modern teaching to the contrary.

It is scarcely surprising that in December, 1935, a series of cases appeared all showing signs of severe secondary syphilis. These cases had been under treatment for chancroid three to four months before. To prevent a recurrence of these tragedies it was obvious that some organized routine was necessary for the control of all cases of penile sore.

We are taught that there are two cardinal rules in controlling and investigating a penile sore: one is roughly the converse of the other.

(*a*) No penile sore should be branded as syphilitic until proved to be so beyond all doubt.

(*b*) No penile sore should be regarded as non-syphilitic until the possibility of syphilis has been thoroughly eliminated.

In other words thorough investigation of a penile sore, particularly one of doubtful incubation and clinical appearance, is in the initial stages of far greater importance than treatment. Treatment must take second place and must be of a strictly conservative nature until such time as a diagnosis is definitely established. For the medical officer the position is often difficult, he is certain that a sore is clinically chancroid or perhaps clinically syphilis, but he can obtain no proof, investigation is a tedious business and at the same time his patient possibly infers that in his opinion very little is being done for him in the way of treatment. Before every thing the surgeon should keep before him the possibility of the sore being syphilitic, or of it becoming so at a later date. He should make up his mind on the first of these possibilities before commencing treatment and even though he is sure that the sore is not yet syphilitic he should so direct his treatment that the clinical picture produced by the later development of the syphilitic element may, if possible, not be obscured [1] We should do well to adhere at all times to this excellent principle expounded by so eminent an authority.

On January 1 1936 following a consultation of Gr. U Specialists the following memorandum was issued to all ships by the Fleet Medical Officer

VENEREAL DISEASE

There has been a considerable increase in the venereal returns contracted at Alexandria. These cases are due to ratings not taking advantage of the prophylactics available and the precautionary measures recommended. The majority of cases commence as chancroid, but in many cases there is a mixed infection and secondary syphilis has developed at a later date. To

[illegible] routine is [illegible]—

(*a*) [illegible] done in the first week then two tests weekly [illegible] while the sore unless becoming phagedenous [illegible] treated strictly with saline during this period

(*b*) Blood tests at three weeks from development of the sore, one fortnightly for two months one quarterly for nine months, if then negative the man may be considered cured

(*c*) On no account should any arsenical or bismuth preparation be given unless the diagnosis of syphilis is confirmed by S P or blood test

(*d*) If there is any doubt as to the identity of a spirochete found, this should be checked by the G U Specialist, Mediterranean Fleet or laboratory of H M H S *Maine*

The application of the above routine to every case of suspected chancroid was a tedious business albeit extremely necessary The main objection was that active treatment appeared to be at a standstill, and of course there was an increase in the time taken to effect a cure When dealing with a large number of cases in hospital it became most desirable that some form of therapy should be initiated which would not seriously interfere with the routine laid down in the memorandum In other words local treatment was abandoned and attention turned towards any reliable form of general therapy The available modern methods were Intravenous tartar emetic diphtheroid vaccine, T A B vaccine, Dorrey vaccine ('Dmelcos')

Tartar emetic was employed by two medical officers and improvement reported There is no doubt however that this form of treatment achieves its greatest success in the sphere of lymphogranuloma inguinale Diphtheroid vaccine had been employed on the grounds that many suppurating inguinal buboes reveal a growth of diphtheroid bacilli on culture of their contents As a means of therapy results are doubtful, and again the sphere of lymphogranuloma inguinale is more favourable T A B vaccine employed pyrogenetically has had its advocates

"Dmelcos" has been widely advocated as a specific for chancroid infections for a considerable time but has not been universally accepted owing no doubt to the fear of the reactions which occur after injections The attitude of the profession as a whole towards Dmelcos is mysterious, and is perhaps illustrated by the following remarks which were made by three most eminent members and recorded by the author who was privileged to be present at the time —

Mr A of St X's Hospital "Dmelcos therapy is the greatest advance in the venereal world in the last ten years"

Mr B of St Y's Hospital "Dmelcos is undoubtedly worth a trial in cases of chancroid"

Dr C of St Z's Hospital "I have found no value whatsoever in this form of treatment and consider it unnecessary"

We in the Service may reasonably assume that there [illegible] value in a form of therapy which causes such controversy [illegible] civilian brethren

In H M Hospital Ship *Maine* it was decided to use 'Dmelcos in all chancroid cases while at the same time adhering to the routine [illegible] It was assumed that any subsequent development of syphilis would not be greatly masked As will be seen later this assumption was modified after some weeks

"Dmelcos or Anti-Ducrey bacillus vaccine is a stabilized atoxic vaccine consisting of an emulsion of several strengths of Ducrey's bacillus Each c c contains 225 million organisms Its special method of preparation ensures very low toxicity while a rigorous count of the organisms ensures uniformity of effect The vaccine acts pyrogenetically causing a transient rise of temperature which is of no danger to the patient under supervision Administration must be carried out by the intravenous route only subcutaneous or intramuscular injection merely causes a most violent and useless reaction

In H M Hospital Ship *Maine* 17 cases of penile sore were treated with 'Dmelcos and 186 injections were given Of these 17 cases 37 were first chancroid infections 2 were relapse chancroid infections and 8 developed manifestations of syphilis Three preparations of the vaccine were employed two British and one French of these the most effective was that manufactured by May and Baker, Ltd, London After thorough examination to ascertain the patient's fitness to withstand an induced pyrexia the following routine was observed —

(*a*) Preliminary preparation by a purge and light diet the night before injection

(*b*) On the day of injection patients were kept in bed and copious fluids given Temperature and pulse were recorded two hourly during the next twelve hours The first intravenous injection was 1 c c subsequent injections were 1·5 c c 2 c c 2·5 c c and 3 c c given on the third fifth seventh and ninth days It was rarely found necessary to give more than four injections.

(*c*) Bacteriological and serological investigations were continued as directed in the memorandum

The highest temperatures recorded were 106·2 and 105 Both these patients in common with the others showed nothing to call for anxiety even at the heights of their pyrexia In all cases it was noted that there was extraordinarily little general malaise considering the severe pyrogenesis created No toxic effects were seen Pyrexia lasted eight or ten hours in most cases, and patients apart from a little weakness felt perfectly well afterwards The local results were indeed most dramatic and successful In several cases one injection caused complete healing of a sore which had been under treatment for many weeks but in the main three to four injections were necessary to give a perfect result In the case of

complicating [illegible] showing enlarging inguinal [illegible] incised [illegible] [illegible] all within [illegible] hours. Again, in those patients who had needed a dorsal slit with consequent infection of the surgical wound by the original sore, immediate institution of "Dmelcos" therapy resulted in a phenomenal reduction in the number of days sickness

RECORDS

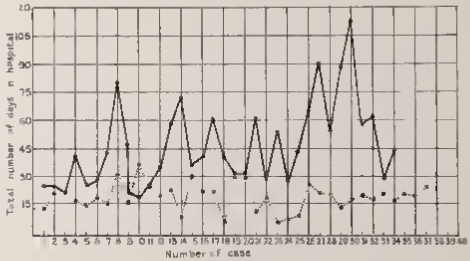
Total number of cases treated with "Dmelcos" —

37 first chancroid infections
3 relapsed chancroid infections
8 cases of chancroid which developed syphilitic manifestations later

| | |
|---|---|
| Total number of cases | 47 |
| Total number of injections given | 166 |

*Thirty-Seven First Chancroid Infections*

The average number of injections given was 3·5 per patient. Reference to the appended graphic record shows a comparison between 34 cases of chancroid which were treated on ordinary lines and the 37 cases treated with Dmelcos




34 cases of chancroid treated on ordinary lines
1,578 days in hospital. Average 44·61 per case
37 cases of chancroid treated with Dmelcos
689 days in hospital. Average 18·62 per case
22 of the latter were complicated by buboes

Treated on ordinary lines —

| | |
|---|---|
| 34 cases. Total days in hospital | 1,578 |
| Average No. of days in hospital | 46·11 |

Treated with "Dmelcos" —

| | |
|---|---|
| 37 cases. Total days in hospital | 689 |
| Average No. of days in hospital | 18·62 |

Reduction 27·79 days—or almost four weeks difference

Of the latter [illegible] had been incised and [illegible] the above record [illegible] The following [illegible] illustrate the [illegible] therapy when [illegible]

| Case | [illegible] | No. injections given | No. days in hospital |
|---|---|---|---|
| 1 | [illegible] | 1 | 6 |
| 2 | [illegible] | 3 | 3 |
| 3 | [illegible] | 4 | 17 |
| 4 | [illegible] | — | 6 |
| 5 | [illegible] | 1 | 5 |
| 6 | [illegible] | 4 | 9 |

Although the limits are extreme these cases suggest that had this form of therapy been instituted in their ships at the beginning, several weeks of incapacitation might have been avoided in each of the six patients

*Two Relapsed Cases of Chancroid*

These two cases were most severely infected and had been under treatment for a considerable time in their own ships Two injections of "Dmelcos" gave apparent complete cure and they were discharged from hospital They both relapsed fourteen days later each with a small intrameatal chancroid Further injections showed no result and no pyrexia could be induced The cautery was eventually resorted to Dmelcos must be recorded as a failure in the treatment of these two cases of relapse

*The Effects of 'Dmelcos' on Cases in which Syphilis Developed*

Eight illustrative cases all lead to the same conclusion viz (i) That the clinical picture of syphilis was unaltered (ii) that the serological and bacteriological manifestations were inhibited and delayed

*Case* 1 —Typical chancroid of four days incubation contracted at Cyprus Six injections of Dmelcos had no effect The sore took on the characteristics of a typical primary chancre after fourteen days Concomitant signs of primary syphilis were present Twenty five S P tests performed during six weeks were all negative and seven Kahn tests over the same period were also negative The blood suddenly became triple positive after eighty two days

*Case* 2 —Typical chancroid of eight days incubation contracted at Alexandria Five injections of Dmelcos caused no improvement After sixteen days the sore showed changes suggesting spirochætal infection Twenty seven S P tests on alternate days were all negative After forty one days the patient developed a typical secondary skin eruption Numerous S P tests from skin scales and on secretions of indurated glands were all negative Blood tests were consistently negative on nine occasions, and became triple positive finally on the sixty ninth day

*Cases* 3 to 8 —In every case typical chancroids remained indolent and unaffected by 'Dmelcos' injections, and showed suspicious changes clinically after three weeks Here again repeated S P tests were negative and the blood became positive only after 94 74, 73 90, 82 and 116 days

The Greek [illegible] of old times realized the value of balneotherapy for venereal infection They converted their thermal springs into baths and obtained successes with their empirical methods which have given the clue to modern workers to-day Julius Wagner Jauregg told the world from Vienna in 1918 that artificial fever produced by malaria inoculation was a valuable ally in controlling neuro-syphilis [2] Interest was stimulated in the subject and a field of research was opened which has attracted many workers during the last eighteen years In 1919 Weichbrodt and Jahnel turned their attention to the effects of artificial fevers produced by physical means [3] They were followed in 1926 by Schomberg, Rule and Tsaug who worked on the lines of balneotherapy [4, 5 6 and 7] The experimental data are legion but it is only since 1931 that a true practical method of producing fever by physical means has been perfected The workers of the Kettering Institute Ohio have put before us the results obtained by the use of their hypertherm [8] These results are sufficient to awake in us a hope by no means faint, that perhaps light is appearing and that we have almost within our grasp a means of combating the venereal scourge Artificial fever therapy has arrived and will progress of that there is no doubt We are in fact led to believe that revolutionary changes are to come in the treatment of gonorrhœa and its complications, and of all stages of syphilis by this means

With this knowledge before us let us turn back to the consideration of supposed chancroid infection and its treatment by "Dmelcos" induced pyrexia We must realize at once that our rules of investigation must be modified to some extent if this form of treatment is to be encouraged In fact the question to be answered is Can diagnosis be sacrificed for treatment can treatment be sacrificed for diagnosis or can a happy medium be found "

The advantages of 'Dmelcos' are obvious A marked decrease in days sickness can be observed in both complicated and uncomplicated cases of chancroid The moral effect is most encouraging and patients tend to be more cheerful and less introspective feeling that something is really being done for them Expense is not high It is obvious that only one possible serious objection can be raised viz the tendency of serological and bacteriological evidences of supervening syphilis to be delayed and inhibited The question to be faced is whether this fact should prohibit the use of this form of therapy altogether With due regard to this potential disadvantage the following statement is submitted in defence of Dmelcos

"That in every case of true chancroid complicated or uncomplicated, immediate improvement was noted after two injections That in eight

[illegible] which showed no improvement suspicions were [illegible] careful supervision maintained. In each of these cases clinical signs of syphilis appeared in a normal manner, but serological and bacteriological evidence was delayed beyond the usual limits. In other words *no case of syphilis was missed through using 'Duelcos'. On the contrary, failure of Duelcos to cause improvement aroused suspicions and a more strict and careful watch was kept.* The delay in serological confirmation was probably exaggerated by the large number of injections given.

"Duelcos" must not be condemned therefore, but must be regarded as a valuable means of therapy for chancroid infection. It provides a safe and successful treatment for chancroid, and it does not mask the clinical signs of subsequent syphilis. It does mask the serological and bacteriological signs of subsequent syphilis for a time and in proportion to the amount given, but it is submitted that this fact is not a contra-indication provided that this effect is recognized, understood and kept in mind at the time of commencing treatment.

## Suggested Routine for Treatment and Control of Chancroid Infections on a Large Scale

A. That all ships be provided with a stock of Duelcos vaccine. That manufactured by May and Baker is best. 15 c.c. bottles are more convenient and less wasteful than small ampoules.

B. That no vaccine be given for ten days. During this time investigations should be carried out daily to exclude the possibility of syphilis in the initial sore.

C. That saline solution should be the only local application throughout the whole course of treatment.

D. If investigations are negative at the end of ten days Duelcos therapy should be commenced. (i) If after two injections improvement is noted then injections should be continued. After the sore is healed and any complicating bubo has resolved blood tests should be carried out periodically for one year. (ii) If after two injections no improvement is noted then Duelcos should be immediately abandoned and investigations should be recommenced with renewed zeal and the grave possibility of supervening syphilis borne in mind. If doubt still exists specialist advice should be obtained without delay.

The above routine would be of great assistance in the Service and would undoubtedly provide a decrease in sickness from chancroid without any serious delay in the recognition of superimposed syphilis cases. In any case this form of therapy is well worth a serious trial on an organized scale for a reasonable period.

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## [illegible] WITH NOTES ON SIX CASES OF PASTEUR TREATMENT

[illegible] LIEUTENANT S GAY FRENCH RN

[illegible] rabies is now virtually unknown in England and therefore [illegible] overlooked in the final mid scarcely reading before Compulsory [illegible] in many countries in which a naval medical officer may find [illegible] a serious menace

[illegible] is one such country overrun with mongrel dogs half of them [illegible] and sporadic outbreaks are the more common since in regard to municipal preventative measures the local authorities are apt to adopt an attitude of [illegible] activity

All warm blooded animals are believed to be susceptible to rabies Certainly it has been observed in cattle cats swine goats and horses Dogs however provide by far the largest percentage (approximately 87 per cent according to figures compiled from France Germany and Hungary) The incubation period is variable usually one to three months but a case has been recorded in a puppy which was severely bitten on the head by its rabid mother where the disease developed in fourteen days In other cases it is stated to be as long as 1 year

The classical forms are the furious and the dumb or paralytic The furious is the more common and is marked by a tendency to wander and to snap furiously at any object which gets in the way Most important of the premonitory symptoms which if recognized may save a dog owner [illegible] Pasteur treatment The first sign is usually a change in the animal's disposition The dog may disappear for a few days or avoid its master slinking into a dark corner and snapping at imaginary flies is [illegible] suspicious The animal refuses food may have difficulty in swallowing water and may become unaccountably restless This stage passes rapidly to the convulsive or paralytic stage whose symptoms are [illegible] well known to be recapitulated here Should a dog be suspected of [illegible] it should be shut up for observation at once before it does any

[illegible] in the [illegible] at the end [illegible]

The differential diagnosis has to [illegible] hysteria [illegible] nervous distemper, hiumasis, strychnin[illegible] foreign [illegible] alimentary tract

LABORATORY D[illegible]

The occurrence of Negri bodies is [illegible] a good [illegible] method in doubtful cases is the subd[illegible] [illegible] fresh hippocampal emulsion in saline [illegible] symptoms [illegible] twelfth day Van Gehuchten and Nelis [illegible] is a proliferation of endothelial cells [illegible] destruction of the nerve-cells of the peripheral ganglia [illegible] sympathetic nervous systems Though not conclusive [illegible] this one of this condition puts rabies out of court

Dogs may be protected to some extent [illegible] of anti-rabies vaccine but this does not appear to be an absolute [illegible] (see notes on H M S *Falcon's* dog p 312)

MAN

In man the symptoms are not dissimilar

Infection is usually by bites but may easily be transmitted by the saliva coming in contact with an open cut and infection [illegible] has been observed in Malaya

Autopsy findings apart from the typical histological [illegible] of the central nervous system in rabies are merely [illegible] and death agony The incubation period varies from fifty-five days (approximately) for bites on the head and neck to seventy-five days for bites on the lower extremities (Baner) During this time the scar of the bite becomes swollen, red and painful and later the prodromal stage is ushered in by malaise anorexia and slight rise of temperature and pulse and most characteristically an unutterable fear psychosis with insomnia [illegible] develops till the patient becomes completely terror stricken when hallucinations may develop At the same time the characteristic spasms of larynx and pharynx occur precipitated by swallowing the sight of water or even any slight external stimulus such as light or noise Convulsions become more frequent Hyperpyrexia develops and death supervenes usually during a convulsion, consciousness being retained until the end In the paralytic type after the prodromal excitement is followed by tremor give way to a spreading paralysis starting at the bitten part No treatment is of any avail except a dark room and the usual symptomatic treatment the developed disease being invariably fatal

ANTIRABIC TREATMENT IN MAN

It is only when faced with the necessity for administering antirabic treatment that one realizes how scanty is one's technical knowledge of the

subject [illegible] but [illegible] Bay [illegible] spinal cords

On March 9 1931, a retriever belonging to H M S *Falcon* Yangtse Flotilla then lying at Hankow was placed ashore under observation for rabies and was killed in the convulsive state four days later Negri bodies being found in the hippocampus *The dog had been inoculated against rabies by the veterinary surgeon six months previously*

Six men whose notes are appended below, were considered as having been possibly infected by the animal two being men with open cuts, whom the dog had licked a few days previously

It should be noted here that the animal is infective for three to four days before the onset of symptoms (Kingsbury *Journ Med Research F M S* 1925) Antirabic treatment after cautery with fuming nitric acid, was started immediately (March 9 1931) the local hospital having a small supply of vaccine and further supplies were obtained by air mail from Shanghai on the following day

The method used in the East differs considerably from Pasteur's original treatment which, it will be remembered consisted of intramuscular injections of infected spinal cords whose virulence had been attenuated by various periods of desiccation

The disadvantages of this method were the complicated routine and the difficulty of storing the cords, but particularly the serious paralysis of the injected muscle which often followed

Hogyo's method is better as far as the paralysis goes, but the vaccine is again difficult to store This method consists of the injection of an emulsion of virulent material injected subcutaneously commencing with 3 cc of a 1 10,000 dilution increasing by stages to 1 cc of a 1 100 dilution

In the East, where storage is especially difficult Semple's (or Fermi's) modification is almost universally used It consists of treating a known emulsion (*virus fixé*) with 1 per cent phenol for twenty-four hours then adding an equal quantity of saline, so that the final dilution of carbolic is 0 5 per cent The virus is killed by the antiseptic and therefore any accident in treatment is impossible, while the vaccine confers a definite immunity It must be stored in a cool place and keeps reasonably well The Shanghai Municipal Laboratories, who supply it take back unused vaccine and replace it by fresh, free of charge so that hospitals can keep a ready supply

### Method of Giving Inoculations

The dose is 3 cc subcutaneously for eighteen days for small bites on the body, hands, arms &c, and 5 cc for eighteen to twenty-four days subcutaneously for extensive, lacerated bites or bites on the face or neck

[illegible]

It should [illegible] the treatment [illegible] ven three or [illegible] f Shanghai M[illegible] and can then [illegible]

REACTION

As the vaccine [illegible] foreign [illegible] brain), sensitization [illegible] the sixth day

This is usually [illegible] ness and swelling large hot tender [illegible] and apt to [illegible] application of hot [illegible]

In one of the cases reported below (Case 1) [illegible] abdominal cramp, half an hour after the ninth injection

All the other cases showed the same symptoms [illegible] and with the exception of Case 6 started [illegible] Case 6 started on the 9th day

In all cases the period of sensitivity was [illegible]

*Case* 1.—Small scratch on cheek [illegible] Cauterized with fuming nitric acid and given [illegible] on March 9

March 16 Complained of pain from previous day [illegible] was red, brawny and tender This subsequent to [illegible] resection and on March 18 he had some [illegible] severe pain half an hour after the injection This [illegible] the abdomen There were no further reactions after [illegible]

*Cases* 2, 3 and 4.—Behaved in identical [illegible] the sixth injection and developing redness and [illegible] after the twelfth

*Case* 5.—Became sensitized at the sixth [illegible] inguinal adenitis after the thirteenth injection which [illegible] quadrant of the abdominal wall This cleared rapidly

*Case* 6 was identical with Cases 2 to 4 except that he [illegible] the fifth day He lost his sensitivity on the thirteenth day

Cases 1 2 3 and 6 received 5 c.c. daily for eighteen days

Cases 4 and 5 received 3 c.c. daily for eighteen days

Generalized urticaria and occasionally a definite anaphylaxis with collapse &c. are said to occur, and for that reason local [illegible] that they always have a hypodermic of adrenalin handy during after the first week The cases quoted however, would seem to that sensitivity occurs earlier than this

A very early and rather curious feature of all six cases was a [illegible] the first five injections they had a period of intense depression in the evenings. This phenomenon has been noticed by local doctors in Hankow [illegible] as far as I am aware been commented upon in the literature of the subject.

At the time of writing this article all six men are in good health.

I am greatly indebted to Dr. A. H. Skinner of Hankow for his advice concerning the above cases, and for giving me the benefit of his experience in this subject.

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## LABORATORY DIAGNOSIS OF ENTERIC FEVER WITH SPECIAL REFERENCE TO THE INOCULATED

By Surgeon Captain J. [illegible] Elliot R.N. (Retd.)

Laboratory evidence of enteric infection may be of two kinds, direct [illegible] Direct evidence consists in the isolation of the causal [illegible] from the blood, faeces or urine. Indirect in the demonstration [illegible] in the serum—the Widal reaction.

It will be convenient to consider the methods employed in relation to [illegible] of the illness at which they are applicable.

[illegible] of the faeces of contacts may occasionally be of value in [illegible] epidemic of enteric fever, as the causal organisms are sometimes [illegible] during the incubation period of the disease.

A sample of freshly passed faeces is sent to the laboratory in a [illegible] with their tightly stoppered container. If there is likely to be [illegible] two hours delay before cultures can be made two volumes of [illegible] neutral glycerol in 0·5 per cent. sodium chloride solution [illegible] added to one volume of the faeces and thoroughly mixed with it [illegible] typhoid or paratyphoid bacilli being overgrown by other [illegible] organisms present.

At the laboratory the specimen is inoculated on plates of a medium which favours the growth of organisms of the enteric group but discourages the growth of most other organisms. The best known medium [illegible] type in Britain is that of MacConkey.

[illegible] preliminary enrichment may be carried out in fluid media containing [illegible] selective antiseptic, brilliant green. Colonies resembling those of [illegible] paratyphoid bacilli are selected, subcultured on agar slopes, and [illegible] by biochemical and serological tests to establish their identity.

With the onset of clinical symptoms the organisms are less easily [illegible] from the faeces, but are readily cultured from the blood. Blood [illegible] should be employed in all cases met with during the first ten days [illegible] illness and in relapses as successful culture provides most conclusive [illegible] of infection in the early stages. Blood is obtained by vein [illegible] 5 c.c. being withdrawn and added directly to sodium taurocholate

broth The culture [illegible] At the end of of this period subcultu[illegible]n MacConkey's medium and the identi[illegible]s have grown is completed The use of a [illegible] counting [illegible] bile or 0 1 gram sodium taurocholate provides an easy method of blood culture

Typhoid bacilli may be found in the faeces at any stage of the illness but will be present most frequently towards the end of the second and during the third week At this stage examination of the stools should be carried out as already described

Cultivation from the urine merits more extensive recognition as a diagnostic procedure than it receives Bacilli are not likely to be found in the urine before the end of the second week of illness and may not be present until much later Repeated examinations are necessary as the excretion of the organisms is usually intermittent, occurring as transient periods of bacilluria The urine is centrifuged and cultures made from the deposit by methods similar to those described for faeces

Specific antibodies usually begin to appear in the blood about the seventh to the tenth day of illness Occasionally they make their appearance earlier (e g fifth day) or their development may be delayed Their presence is detected by the Widal reaction which may thus be of value after the seventh day In an uninoculated community where enteric is not endemic, diagnosis by this method should not present difficulty It must be remembered however, that only indirect evidence of infection is provided and that the test is open to fallacy e g the Widal reaction may be negative in cases of undoubted clinical typhoid fever In inoculated communities difficulty is experienced from the fact that prophylactic inoculation gives rise to agglutinins in varying strength which may persist for long periods A positive Widal in an inoculated subject does not necessarily therefore indicate infection

Before considering the application of the test it may be well to review the methods by which it has been carried out Originally the test was a microscopic one Drops of the patient's serum in suitable dilutions mixed with drops of an emulsion of a known culture of *B typhosus* were placed on slides After an interval, the mixtures were examined under the microscope to see if any clumping of the organisms had taken place Similar mixtures of serum and known cultures of *B paratyphosus* A and B and sometimes C were also used all tests being subjected to proper controls Although a rough one the test was effective in indicating the presence of agglutinins in the patient's serum but, while of value in the uninoculated in whose sera normal agglutinins for the enteric group are rarely found it was valueless for the sera of those who might reasonably be expected to possess agglutinins as the result of inoculation or of a previous attack of enteric fever This was succeeded by a macroscopic test in which varying dilutions of serum were set up in small tubes to which were added emulsions of live cultures of enteric organisms It was possible

by this means to obtain a quantitative estimation of the amount of the agglutinins present. The application of the test to the sera of large numbers of non-infected and non-inoculated persons showed that, whereas agglutination might occur with lower dilutions of serum it was absent when the degree of dilution reached 1 in 50 or higher for *B. typhosus* 1 in 50 or higher for *B. paratyphosus* A and 1 in 20 or higher for *B. paratyphosus* B. These were therefore taken as diagnostic titres.

Objections have been raised to this test on the grounds that the agglutinability of the antigen (emulsion of live organisms) varied with the age of the culture, with the density of the emulsion, with different strains of organisms and with the same strain from culture to culture. Further that the practice of using cultures of live organisms was attended with the risk of infection to the worker.

To overcome these objections Dreyer introduced a standardized method in which a formolized suspension stable in respect of its agglutinability was used so that the results obtained in one laboratory could be compared with those obtained in others and a uniform diagnostic titre established. This possessed certain disadvantages however, which will be referred to.

The application of all these agglutination methods to the diagnosis of enteric fever in the inoculated was beset by the difficulty already mentioned. It was impossible to say whether the agglutinins demonstrated were due to the infection or to post-infection or to preventive inoculation.

A contribution to the problem Dreyer and his colleagues (1915–1916–1917) suggested that the Widal test be repeated at four day intervals during the course of the illness. A regular rise in the titre for one of the typhoid or paratyphoid organisms attaining its maximum between the sixteenth and twentieth day of the disease would signify infection with that organism.

Negative Widal reactions were sometimes obtained in cases of infection with enteric organisms. These organisms are flagellated and it was first shown by Smith and Reagh (1903) and by Beyer and Reagh (1904) that the antigens present in the body of the organisms differ from those in the flagella. The body antigen, or 'O' antigen as it is now called is rendered ineffective by formalin, while the flagella or 'H' antigen is destroyed by heat or alcohol. The 'O' antigen is not specific, but the "H" antigen or a fraction of it is specific for each member of the enteric group. "H" agglutination occurs rapidly and is of a large flake type. "O" agglutination occurs slowly and is fine and granular.

In the method of qualitative receptor analysis which he introduced Dehx (1923–1924) made use of both "O" and "H" agglutination. To detect "O" agglutinins he used strains rich in 'O' antigen and to detect 'H' agglutinins strains rich in 'H' antigen. He tested normal sera and sera from infected and from inoculated persons, and came to the conclusion that inoculation gave rise to "H" agglutinins only, and that the finding of "O" agglutinins, at least in a titre of 1 in 100 in an inoculated person, was

evidence of active [illegible] impossible of [illegible] organism. He [illegible] course of the disease [illegible] that non-flagellated [illegible] use of a formolized antigen alone [illegible]

Later workers have repeated [illegible] emulsions for their H antigen and [illegible] their O antigen. Had Felix's [illegible] have afforded an easy and rapid means [illegible] majority of subsequent workers [illegible] and Denois and Berberian (1934) [illegible] O agglutinins and that these may be present in high titre.

The writer was recently concerned [illegible] 100 inoculated naval ratings (Beattie and Hunt 1937). It was found that the sera of inoculated subjects contain O agglutinins in a titre as high as that found in enteric patients.

It would appear to be impossible to [illegible] H or O agglutinins in the inoculated. A titre of 1/50 thousands for either antigen renders it probable that the patient is suffering from enteric fever but anything less than that is of little diagnostic value.

The only procedure which may be helpful in the inoculated would appear to be the repetition of the test at long intervals as recommended by Dreyer. An alcoholized or heated O antigen should in addition to a formolised H antigen in order to detect agglutinins in the early stage of the disease, and to ensure that the presence of a possible non-flagellated infecting organism is not overlooked. Such a routine procedure is laborious however, and the evidence which it gives is at best presumptive. Thus the Widal test must be regarded as the least satisfactory laboratory aid to diagnosis in inoculated persons. Unfortunately it is the one most commonly asked for in cases of suspected enteric infection.

Where blood taken before the seventh day of illness is sent for a Widal test, a diagnosis may often be made by culturing the clot. Downie and Fairbrother (1934). It is placed in 5 c.c. of sterile ox bile or 10 c.c. of bile salt broth, incubated for twenty-four hours and subcultures are made on a suitable medium as previously described.

Although this procedure is not to be preferred to the method of blood culture already described, in the inoculated it may prove to be a more profitable line of investigation than the carrying out of agglutination tests. In the uninoculated a positive result may be obtained while the Widal is still negative owing to agglutinins not yet having developed.

The main source of enteric infection in countries where sanitary conditions are good is the carrier. Carriers in most cases have suffered

[illegible] the disease at some previous time. [illegible] infection may have been so mild as to be unaccompanied by definite clinical symptoms. Temporary and chronic carriers have been described. The former excrete bacilli during and after convalescence for short periods up to a maximum of twelve months. In the case of chronic carriers the stools or urine or both may contain bacilli for indefinite periods beyond twelve months, and in some cases excretion may persist throughout life.

A search for carriers should always be undertaken when outbreaks of enteric fever occur, attention being directed to cultivation of the organisms from the faeces and urine. Repeated examinations are usually necessary, as the excretion of the bacilli by carriers is frequently intermittent and the organisms may be very scanty. In order to facilitate the finding of these, enrichment methods of culture should be employed.

## Summary

The steps to be taken in making the laboratory diagnosis of enteric fever are —

(1) In contacts during the course of an actual epidemic. Cultures from the faeces.

(2) During the first ten days of illness and in relapses. Blood culture.

(3) At any time, but especially towards the end of the second and [illegible] the third week. Culture from the faeces.

(4) After the second week. Culture from the urine. Repeated examinations [illegible] necessary.

(5) After the seventh day. The Widal reaction—the least satisfactory [illegible] diagnosis in the inoculated.

(6) Culture of clot from blood sample sent for Widal reaction [illegible] only applicable in the case of inoculated subjects, and to samples [illegible] prior to the tenth day of illness.

In searching for carriers repeated examinations of faeces and urine are [illegible].

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## SOME REMARKS ON THE TREATMENT OF COMPOUND FRACTURES

By A. SURTEES [illegible]
*Royal* [illegible]

When the Great War came to an end [illegible] time and opportunity to survey in perspective [illegible] modes which had been employed in the treatment [illegible] they found that a remarkable degree of uniformity [illegible] detail of treatment, in the opposing armies [illegible] had been achieved.

This, indeed is surprising when it is [illegible] surgical enthusiast had had an opportunity [illegible] theories into practice for there had been no [illegible] However as the War wore on certain methods [illegible] by the success which had attended their use.

Probably the best known exponents of the new [illegible] Army were Hey Groves Pearson and Morris [illegible] armies of the Central Powers Lorenz Böhler [illegible] conclusions and was getting equally brilliant [illegible]

To give a couple of examples The mortality [illegible] of the femur which in the British Army in [illegible] the following year reduced to 15 per cent This [illegible] to the use of the Thomas's splint in their [illegible] splint which had been used hitherto The other [illegible] might be quoted is the use from 1917 onwards [illegible] for the reduction of fractures and the extension [illegible] compound fractures.

When the War ended and the surgical units in the Field and in [illegible] were broken up and their personnel dispersed it seemed [illegible] the surgical lessons so painfully learned would soon be forgotten and relegated to the pages of the surgical histories of the War.

They appear to have been rescued from this oblivion by an unfortunate circumstance About this time the increasing number of road accidents which followed the introduction of the cheap motor car focussed attention on the frequently occurring compound fracture These were to be found everywhere, and usually the first man called to see the injured was the local practitioner whose ideas on the treatment of recent compound fractures were sometimes a trifle vague and after admitting the patient to the nearest hospital as soon as possible Apply for this the local practitioner was not to be blamed If he had had no personal experience and appealed to the current textbooks he got little help for these were often far from being unanimous and were either vague and elementary, or

[illegible]

It wa[illegible]

[illegible] with marrow but [illegible] base ingratitud[illegible]

[illegible] in tly stimulated by the number of road accidents [illegible] in the publication in the press of the findings of [illegible] which had been inquiring into the final results [illegible]

[illegible] with headlines and without the context made [illegible] reading [illegible] even when completely studied gave the impression that the treatm[illegible] of compound fractures in the United Kingdom left in [illegible] cases a good deal to be desired

As a result of this examination of surgical conscience the work of Hey Groves, Pemberton, Bidder and Sinclair was discussed and examined and from this emerged certain principles which it was advocated could be put into practice with a minimum of equipment and experience

Fracture clinics were set up in those hospitals where hitherto the early treatment of fractures had devolved on the duty house surgeon and it soon became apparent to everybody that the most gratifying results were being obtained by following the new principles

These principles might be summarized as follows —

(1) The treatment of shock (2) Reduction of the fracture by traction (3) early excision of the wound with closure of the skin avoiding the excessive use of antiseptics and the omission of irrigating the wound

And as has often happened before when the new principles were examined, they were found to be quite respectably old Volkmann, considering the problems of the treatment of fractures was perturbed by the fact that in the German hospitals in 1877 there was a 40 per cent mortality following open fractures and in 1895 Freidrich had worked out a rationale and devised a technique for the primary excision and closure of these wounds Both Volkmann and Trendelenburg were practising this technique in 1906

Unfortunately it fell into disrepute, because the Listerian enthusiasts did not know where to stop and, for example were wilfully protruding the fractured bony extremities through the wounds, and spraying them with carbolic acid solution until the bones turned white In Scotland and in those countries where Lister's principles were better understood excellent results were obtained by following Volkmann's and Trendelenburg's methods

## Diagnosis

The diagnosis is often self evident but every wound overlying or in the vicinity of a fracture should cause the fracture to be treated as a compound

fracture The presence of fat droplets in the blood of course a p sign

The use of a probe to investigate a wound which may be connected wit a fracture is to be condemned for as Mennig Sinclair expresses it the wound through which the probe passes is almost certainly infected the effect of probing on the deeper parts can only be described as a stab cultures

In discussing the treatment of compound fractures such as might in an action at sea I think it would be convenient to consider them in two sections and in some detail

These sections might be described as (*a*) Immediate treatment and (*b*) later or deliberate treatment

A word of explanation about the detail I hope that it has been quite clear that the detailed technique which I shall describe is the outcome of the long experience of such men as Sinclair and Bohler and that every point is of considerable importance This I am sure, will explain the repetition of detail and the apparent dogmatism

### Immediate Treatment

(1) A large injection (one-third to half a grain) of morphia

(2) The wound should be inspected through a window cut in the clothing

(3) The surrounding skin and the wound margins should be painted with the weak tincture of iodine Obvious superficial dirt and foreign bodies are withdrawn and the wound is covered with sterile gauze The surrounding area is not washed or shaved

(4) With great care the limb should be extended by manual traction and gently placed on a Thomas's or Braun's splint Traction should be maintained until the slings are adjusted to support the limb in a suitable position and until some device is applied to maintain the traction Useful appliances for maintaining temporary traction are Sinclair's spat a bitch round the ankle with the knot on the inner side and a skewer passed through the sole of the boot

Generally, fractures round the knee joint are best treated in flexion because of the typical displacement which occurs in these cases Fractures round the elbow joint are also usually best treated in flexion, with some such device as the collar and cuff If this position is used, careful watch must be kept because of the likelihood of the circulation being interfered with by swelling

The following is Sinclair's dictum 'Shock following a fracture is best countered by extension and immobilization and the early administration of a large dose of morphia If shock is severe raise the lower end of the bed ten inches and give hot drinks When pain disturbance, loss of blood and body heat, have produced a severe degree of shock, the patient should be left for some hours fully clothed with the limb extended in a splint

[illegible] from the shock

If the patient has lost much blood an intravenous injection of saline or better still and more convenient, an intravenous transfusion of gum saline solution such as is prepared by Crookes is indicated

## Deliberate Treatment

The following routine is that recommended by Bohler When the patient has recovered from shock the area of the wound—if it is a small wound—and the surrounding skin are again painted with tincture of iodine after the removal of gross dirt The wound and the broken bone are then rendered insensitive by the injection of 0 5 per cent novocain solution The needle is inserted about one inch from the margin of the wound and is not thrust through the soiled wound itself Superficial wheals are formed and through these the entire area surrounding the wound is infiltrated The solution appears in the wound and flows over it coming from the depths to the surface

Usually the effect of the local anæsthetic on the general condition is very remarkable As soon as the pain has been relieved by the local anæsthetic the colour of the face improves and the pulse becomes slower and stronger without the use of stimulating drugs If the wounds are of the lower limb and are very extensive spinal anæsthesia is recommended Brachial plexus block is recommended by Bohler for extensive injuries to the upper limb, I have no experience of this myself, and have seen it fail to give perfect anæsthesia at the hands of those with less experience of this method than Bohler I have, however got excellent anæsthesia with local infiltration with 0 5 per cent novocain plus evipan, in those patients who were apprehensive of local anæsthesia only and who begged to be put to sleep

As soon as anæsthesia has set in and the pulse has recovered, frontal and lateral x-ray views are taken Whilst these are being developed the operator and his assistants wash up and the patient is undressed and cleansed If there are several wounds and if more than one surgeon is available two or more wounds are dealt with simultaneously

The wound and the surroundings are again painted with tincture of iodine, and are surrounded by sterile towels The bruised and torn skin edge is cut away for a width of one or two millimetres with the aid of forceps and a sharp knife If too much of the skin margin is cut away the wound is made so large that it cannot be closed this is to be specially avoided in the fingers The skin margins are now fastened to sterile towels with clips so as to prevent further contamination of the depths of the wound from the skin All tissue that is torn or crushed is carefully removed without using a tourniquet, and this is best done by picking up the tissues with forceps and removing wide but very thin layers This is

very easy because the different layers of the tissue are swollen by the previous injection of the local anæsthetic.

Large blood vessels, nerves and tendons are carefully preserved. Only the soiled sheaths of these structures may be removed. In deep wounds the edges must be forcibly retracted to reveal the depths. When the skin is much undermined as so often happens it must be divided so that the angles of the wound lying beneath can be examined and cleaned from foreign bodies. The division of the skin must always be made in a longitudinal and not in a transverse direction so as not to interfere with the blood supply of the skin flaps. All spurting vessels are taken up. Usually it is only necessary to tie the largest of these in the smaller, bleeding will have been arrested by the time the forceps are removed.

Only the soiled surfaces of the bones are removed and this by chisel and hammer or sharp spoon. Bone fragments are only removed if they be absolutely free and separated from all connections. Scrubbing of the bones and lavage of the wounds is undesirable as fragments of dirt and infection are liable to be carried into the depths of the wound by this means—and even to be driven into the bone-marrow.

When the wound is quite clean it is again treated with tincture of iodine and the skin (and the skin only) is closed with fine silkworm gut sutures without inserting any drainage if there is no torn muscle or vitality. The only exception to the rule of suturing the skin alone must be made in the case of severed nerves. The ends of these should be brought together accurately with three or four fine catgut sutures which take up the nerve sheath only.

When large masses of muscle have been injured by direct violence or where large cavities remain in the depths of the wound a rubber tube or drain should be inserted and left for one or two days. Such drains are not brought out through the wound but through a fresh opening in the healthy skin, and they are brought out at the most dependant part.

If there has been a great loss of skin as is so often the case in the front of the tibia, the exposed bone is covered by making tension incisions on one or both sides, sliding the skin and sewing it over the exposed bone. The new skin openings thus made can be covered in by Thiersch grafts or they can be allowed to heal by granulation. The tension incisions must be made at least three or four finger-breadths from the sides of the wound otherwise there is a danger if the flaps are too small of sloughing and of the skin defect thus becoming larger than ever.

In the manner thus described the open fracture is converted into a closed one and it is now treated as such, rectifying the displacement by traction. In this way entangled blood vessels are set free and large cavities in the wound are made smaller. A new x-ray is now taken. If this does not show satisfactory position a further attempt at rectification is made. This second attempt may only be made within two or three hours of suture of the wound. Later than this the danger is too great of infection being

caused by [illegible] still had it will be necessary [illegible] and the skin is normal The suture [illegible] As the surrounding skin is often damaged it begins to weep and any overlying dressings become moist, leading to maceration of the skin, infection of the sutures and a driving in of the suppuration through the stitch wounds, to the bones and the open tendon sheaths and fascial spaces If the wound is left exposed the escaping blood and serum dry to form a crust and this closes the wound satisfactorily Healing takes place readily under the dry scab

The limb is then placed the leg on a Thomas's or a Braun's splint the arm on an abduction splint, so as to promote a good circulation Avoidance of stasis and ensuring a good circulation, are the best means of preventing infection

After excision and suture of the wound a marked febrile reaction often sets in If the parts round the wound which always remain exposed, are not red and tender on pressure, and if there is no palpable involvement of the lymph glands, it is not necessary to remove all the stitches It will be enough to take out one or two If the stitches are under tension because of primary loss of skin they should be removed after three to six weeks otherwise the edges of the wound will gape and a secondary infection may arise

It is very dangerous to close the wound without first removing all tissues whose vitality has been injured and all foreign bodies completely It is not enough, as is often done only to trim the skin edges and then suture Severe cellulitis, and if the appropriate infecting agent be present, gas gangrene tetanus, or malignant œdema may be the result The necessity of giving prophylactic anti-sera, obviously depends on the circumstances in which the injuries are received Certainly the administration of anti-tetanic serum should be a routine measure for wounds received ashore

The following is a summary of the treatment of recent open fractures

(1) The treatment of shock by warmth and morphia

(2) The use of local anæsthesia or, where applicable, spinal

(3) The careful excision of the wound

(4) Suture of the skin and of the skin only, without the use of any buried sutures except for divided nerves, and the use of a drain only when there are torn muscles or a large cavity

(5) After closure of the wound efficient reduction of the fracture, and then continuous, unbroken rest

(6) Wounds to remain exposed (i.e. uncovered by dressing)

(7) Raising of the injured limb to aid circulation

The following is Bobler's list of errors in the treatment of recent open fractures —

(1) Operating before the patient has recovered from shock

(2) The use of general anæsthesia

[illegible]

[illegible]

[illegible]

(5) [illegible] wound for more than six to eight hours

(6) Incomplete excision, leaving [illegible] damaged tissues and foreign bodies

(7) Too free removal of the skin [illegible] As a result the edges cannot be accurately closed without being too much under tension

(8) Removing bone fragments which lie about the fracture By doing this, non-union may be caused.

(9) Scrubbing the bone ends with brushes and hot water

(10) Setting the fracture in the open wound by means of levers and instruments

(11) Bone suture by means of large foreign bodies particularly plates and screws

(12) Suture of muscles tendons and fascia The buried sutures may lead to suppuration and sinus formation

(13) Neglect of nerve suture Result lasting paralysis

(14) Unnecessary packing and drainage by which the fracture remains open and suppurates

(15) Using too small flaps in the plastic repair of the skin The flaps may slough and expose the bone

(16) Setting the fracture and altering the position more than two or three hours after suture and before the wound has healed Infection may be the result

(17) Too early removal of the sutures which are under tension The edges of the wound may gape and lead to secondary infection

(18) Neglect to leave the wound exposed and uncovered by a dressing Maceration of the skin and secondary infection may result

(19) Neglect to raise the limb Swelling results owing to interference with the circulation often also infection and cutting out of the sutures owing to the raised tension of the œdema

# On

[redacted]

[redacted] collapse [redacted] is has become increas[redacted] Attempts have been made to apply it in one form or another to most varieties of the disease, but with very mixed results When the disease is of a predominantly fibrotic type good results are generally obtained with any form of collapse therapy Although predominantly exudative cases may respond well to some of the measures which by collapse is obtained, thoracoplasty is likely to prove disastrous if they are subjected to it The thoracic surgeon is faced with one of his most difficult tasks in connection with a large group of cases for whom the operation offers the only prospect of cure, and yet in which it is by no means easy to decide whether the disease is predominantly productive or exudative Apparently identical cases may be operated upon some doing well, but others perhaps so badly that the surgeon's faith in the operation may be severely shaken yet he knows very well that without it the patient has little prospect either of ultimate recovery or of prolonged survival. Every endeavour, therefore, must be made not only to understand the indications for thoracoplasty but to explore fully the possibility of extending them by improvements in technique and by the alternative and accessory procedures available

## Indications

There is a great difference between the collapse of the lung obtained by introduction of gas fluid or solid material between it and the parietes, and that obtained by plastic operations whereby the capacity of the hemithorax is diminished With the former measures the collapsed lung being splinted by the material introduced is also a lung at rest and complications apart from sepsis are singularly rare In the latter, the difficulty of keeping the ailated chest wall adequately immobilized is so great that the converse has only too often proved to be the case The principal requirement of a fibrotic lesion is facility for its scar tissue to retract An exudative lesion requires above all things rest at any rate until fibrosis develops the value if any, of supplementing general bodily rest by collapse in these cases is in the increased amount of local rest which it permits

[1] Reprinted from *Tubercle* by kind permission of the editor and the author

Adequately splinted by [illegible] or wax an extensive [illegible] but exposed to the [illegible] of the mobile chest wall where [illegible] unavoidable in the early [illegible] thoracoplasty such [illegible] is unlikely and it is decidedly better [illegible] by conservative measures if the simpler forms of collapse are unattainable. Andre Maurel and Hellind [1] in common with many other writers, emphasize that 'surgical collapse therapy does not promise good results when directed against lesions presenting no spontaneous retractile tendency.'

The outlook for these cases is so grave that efforts have been made not only to remove the general resistive powers of the body but to increase the local tendency to cicatrization. Various efforts towards this end have been made. Sauerbruch and Schlaepfer [2] working independently both found that marked fibrosis of the lung followed ligation of the pulmonary artery; the former used the procedure as a therapeutic measure in connection with his earlier work on bronchial cysts and the latter has suggested its use in pulmonary tuberculosis. Reichmann [3] applying the original experimental work of Igel obtained encouraging results by ligaturing the pulmonary vein in a small series of cases unsuitable for collapse therapy. His results have been repeated in this country by O'Shaughnessy [4]. These operations are apparently worthy of further consideration and trial because, haemorrhagic accidents excluded, they are not severe and by such means we may be able to steer some of these desperate cases into a sufficiently fibrotic state to justify a subsequent thoracoplasty.

A chronic unilateral fibroid or a fibrocavernous lesion is the type of case for which thoracoplasty is ideally suited; indeed it is for such that it was originally employed with such success by Sauerbruch [5] more than twenty years ago. A series of 122 cases of whom only 3 died as a result of the operation, was reported by him in 1914 and the number of permanent cures in this series has proved to be between 70 and 80 per cent. Mr Morriston Davies who introduced the operation into this country tells me that three of his original four patients of this type operated upon many years ago are still well and working.

Pyo pneumothorax is a condition urgently requiring thoracoplasty. It can be safely performed in stages suitable for the patient's strength. Drainage is unnecessary, the pus being removed by aspiration if secondary infection has not already occurred. If secondary infection is already established preliminary drainage is required to save the patient from the severe toxaemia; later, to obviate lardaceous disease, and to abolish the sinus an extensive thoracoplasty—often in many stages—is required to obliterate the cavity. The Schede type of operation is dangerous and unnecessarily mutilating; it is preferable and usually possible to close the worst cavities by entirely extrapleural operations—usually the standard para vertebral operation being supplemented by extensive rib resections in the antero lateral chest wall; later, if need be, any small residual cavity may be laid freely open and allowed to heal up from the depths.

Another condition for which this operation might [illegible] necessary even in the presence of some contralateral disease is hæmoptysis

The large number of cases in which it is uncertain as to the proportion in which fibrotic and exudative changes are present, require special and careful consideration before operation is either decided upon or withheld, any evidence of fibrosis—slight deviation of the trachea, approximation of the ribs or of cardiac displacement—should be looked for and taken into account These cases are usually apical, and my present practice with them is to remove a portion of an upper rib through the ordinary paravertebral incision and to attempt an extrapleural pneumolysis by digital insinuation If successful "plombage" is used to maintain the necessary collapse If the density of the adhesions is such as to make the separation impossible or difficult to the point of hazard, then an upper thoracoplasty is completed in suitable stages, probably only portions of two ribs being removed at one time The smaller the individual intervention the better in these cases

If need be, quite long intervals are left between the stages, systematic use of such caustics as Zenker's solution—it is my practice to leave strips soaked in it in contact with the periosteum of the rib bed for at least four minutes—makes it quite possible to complete a thoracoplasty over a period of several months without undue trouble from regeneration of the ribs meanwhile

In certain of these cases in which only a "contra-selective" collapse can be obtained by artificial pneumothorax this should be maintained until the apex has been collapsed by thoracoplasty The pneumothorax under such circumstances seems to exert a beneficial influence on the post operative course possibly it has some sort of splinting action One word of warning in this connection death from asphyxia has resulted in such a case, in which for some reason a positive pressure had been maintained in the pneumothorax without the operator's knowledge

The desirability of diminishing the capacity of the chest by thoracoplasty prior to termination of a successful pneumothorax is worthy of consideration and its possibilities require investigation

Patients with large solitary cavities of whom probably at least half die within two years if untreated form another difficult problem The risks of post operative dissemination are great unless the utmost caution is taken over the operations which should be carried out in several stages

The desirability of drainage as a preliminary procedure should not be dismissed lightly, the experience of those who advocate this step suggests that it is of such great practical value as to be regarded by them as a life saving measure the subsequent improvement being amazing despite the occasional but by no means invariable persistence of a small sinus after obliteration of the cavity by thoracoplasty

The existence of bilateral disease is naturally regarded with considerable misgiving by those responsible for such cases However, the necessity

[illegible] undertaking [illegible] especially when [illegible] and predominantly [illegible] that this type of [illegible] the future

[illegible] operation [illegible] after a successful thoracoplasty [illegible] surviving the operation have also [illegible] removed Old people and young children [illegible] the operation the former on account of [illegible] latter because of the unsuitable type [illegible] have little opportunity for treating [illegible] tuberculosis but one of my successful [illegible] girl aged twelve years

A neglected group is formed by those [illegible] thoracoplasty had been performed but who [illegible] general condition inimune to expectoration [illegible] highly undesirable state of affairs All such [illegible] not abolished within six months of the [illegible] require careful investigation Under the collapse [illegible] some relatively small but still active cavity which [illegible] the dense scar in its vicinity To permit this the [illegible] must be removed and sometimes a paraffin [illegible] Exact localization of these residual cavities [illegible] less necessary and this is one of the fields in which [illegible] tomograph will prove of use

## Technique

The best collapse of a lung attainable [illegible] artificial pneumothorax which has been gradually [illegible] is general permitting free retraction towards [illegible] practicable and possible the ideal thoracoplasty [illegible] emulate this

The settlement of the perennial [illegible] should be removed before the lower and more [illegible] matter of individual preference Personally it is my practice [illegible] above as I feel that only in this way am I able to regulate with [illegible] degree and rate of the consequent collapse When the [illegible] removed first it seems to me as if the final [illegible] to the removal of the upper ribs is the signal [illegible] inward increase of the collapse occurring after the [illegible]

Since the work of the pioneers [illegible] the importance of proportional collapse and diminution in the capacity [illegible] paravertebral rib resections, the value [illegible] has been overlooked The ribs being curved [illegible]

ing portion of even one of them entails some diminution in the capacity of the chest on that side, and that any tendency to retraction in the adjacent lung is encouraged thereby. An application of this principle has recently been brought forward by Monaldi who advocates a lateral thoracoplasty for mid-zone lesions.

Anterior and axillary resections are also widely used as supplementary procedures after or sometimes before, a standard paravertebral operation.

Other valuable supplementary measures include removal of the transverse processes of the upper vertebræ at the same time as the adjacent ribs are resected to permit additional collapse, medialwards, advocated by André Maurer of Paris [6] and the detachment of the pleura from the chest wall by means of the extrafascial apicolysis introduced by Semb of Oslo [7] to permit additional collapse in a vertical direction.

## Complications

The complications recorded after thoracoplasty are numerous, including shock, hæmorrhage, air embolism, generalized emphysema, sepsis, nerve injuries, wounds of the pleura, thrombosis of the subclavian vein, asphyxia, and a variety of deformities in addition to a series of disturbances in connection with the lungs themselves—atelectasis, post-operative pneumonia and drowned lung.

*Shock*.—Shock is encountered more frequently in women than in men, and its danger seems to be greatest in proportion to the amount of exudative change present, although this may be merely because such patients are more weakly. It also seems to bear a very definite relation to the degree of change in the size of the chest brought about by the operation. Because although residual operations such as correctoplasty are relatively great trauma, shock is not strikingly associated with it; it would appear that it is the degree of lung collapse which is to some extent responsible for these operations to obliterate a pyo-pneumothorax, previously established by drainage, give rise to comparatively little shock. Holst, Sundroos and Hultman Dahl [8] point out that shock appears to be associated with an unfavourable prognosis, but think that this may be really an expression of a general lack of resisting ability in the patient.

The most important points in the prevention of shock appear to be the maintenance of body heat during operation and immediately after, careful rather than rapid operating and the use of anoci-association. Morriston Davies and F. R. Edwards [9] have observed a remarkable absence of shock when they have taken the precaution of freely infiltrating the vicinity of the stellate ganglion and the upper intercostal nerves with local anæsthetic. Equally important is the amount and the rate of the collapse permitted at one stage. Only the amount and number of ribs to be divided upon beforehand should be removed and except in very fat individuals fibrotic cases one at a time and not all together as is sometimes done after preliminary stripping of their periosteum.

*Hemorrhage* [illegible] result with satisfactory [illegible] in ordinary cases [illegible] the subclavian [illegible] not only during the operation but during [illegible] presumably it is [illegible] the end of the first [illegible] therefore either only to divide the rib posteriorly or to remove it [illegible] entirely and in any case to leave only smooth cut ends if this accident is to be avoided Cyclopropane may give rise to such a profuse oozing [illegible] the amount of blood lost in the aggregate may be serious This anæsthetic however is not generally used and for the time being at least we have abandoned it so far as this operation goes

*Air embolism* has occasionally been reported in connection with this operation The possibility of its occurrence, especially when dissecting in the vicinity of the subclavian vein should be remembered, and oxygen administered under pressure immediately its occurrence is suspected

*Generalized emphysema* has occurred, probably in association with an unrecognized perforation into a cavity such a complication would probably be prevented by the use of a drainage tube in the wound after operation The occurrence of such a case has converted me to this practice

*Sepsis* comparatively a frequent complication, is usually so slight as to occasion little or no anxiety Infection may be introduced from the exterior—especially during the post operative period—so that great care should be taken with the dressings to prevent this During operation it is not uncommon to find an appreciable amount of induration of the deeper aspects of the pleuro-periosteum when resecting the ribs the possibility, therefore of infection being released from such tissues must be borne in mind The careful chemical cauterization of the periosteum now generally employed probably effectively deals with this risk During the first few hours after operation there is usually a profuse discharge of sero-sanguinous fluid, of which the bulk is carried away by the drainage tube if infection occurs this becomes purulent and usually clears up without untoward result but occasionally a malignant infection develops leading to bone necrosis complete disorganization of the wound, and severe even fatal, toxæmia The wound must as soon as possible be laid freely open in the hope that the sepsis will subside Occasionally necrosis of the aponeurotic fasciæ of the back gives rise to fever, and a carbuncle like condition of the overlying skin some ten to fourteen days after operation The cause of this is uncertain care should be taken to avoid undue drainage to these structures by /enters fluid but the condition occurs even when such substances are not used so that it is probably due to interference with the fascial blood supply Hence undue stripping of the fascia must be avoided

*Nerve injuries* are occasionally encountered usually taking the form of bruising of the inner cord of the brachial plexus, and causing transient weakness of the small muscles of the hand Spontaneous recovery is the rule

*Deformity* of varying degrees is almost invariably associated with

thoracoplasty It is [illegible] its prevention and if the [illegible] Some surgeons go to [illegible] prevent its occurrence [illegible] this practice for the purpose of maintaining the full mobility of the [illegible] are likely to prevent the complete collapse and rest of the chest wall [illegible]

*Pneumothorax after Operation* Pneumothorax after thoracoplasty is one of the commonest complications which the operation is performed in the presence either of [illegible] cavities in which a fluid level is visible especially of any [illegible] evidence of extensive disease It is an almost certain sequel of the [illegible] it is referred to and is under such circumstances very often fatal It usually gives rise to a marked and persistent post operative pyrexia an increased and a snowstorm appearance in the radiograms of the involved part of the lung Such cases not infrequently die, but by no means all of them and complete recovery may occur the temperature falling by lysis and the sputum gradually disappearing Once it occurs absolute rest and general constitutional treatment offer the only hope of recovery If it occurs before the operative stages are completed the remaining stages must be either abandoned postponed or modified—a matter which can only be decided on the merits of any particular case

*Pulmonary complications* form the most important of all the sequelæ of thoracic operations They occur most frequently in association with [illegible] thoracoplasties As has already been indicated naturally the risk of their occurrence is the greater in proportion to the amount of exudative change in the portion of the lung collapsed Holst, Semb and Erimann Dowdy who have gone into this question very fully from the radiological clinical and pathological aspects consider that probably many of the post-operative disturbances hitherto recorded as due to 'heart failure,' shock and mediastinal flutter have really been due to atelectasis The clinical picture of this varies general disturbance may be so slight that the condition may be only discovered accidentally by radiological examination or serious even fatal symptoms may occur Cyanosis may be marked especially if there is little expectoration and vice versa The cyanosis may be due to bronchial spasm but it is more likely to arise from the occlusion of a bronchus by tenacious secretion which the patient has failed to expectorate because of pain, undue mobility of the chest wall and in certain cases perhaps, because of a flaccid diaphragm To prevent these pulmonary complications every effort must be made to encourage and to facilitate coughing and expectoration by relieving pain and stabilising the [illegible] chest wall as far as possible by firm padding and strapping

*Infection and ulceration* almost always occurs to some extent after operation Pyrexia indicating toxic absorption from the collapsed lung may occur at any time within the first ten days reaching 103 F or so and falling by lysis during the subsequent few days Sometimes the temperature may

[illegible] these [illegible] of the [illegible] lungs

[illegible] has described [illegible] ordinary [illegible] the extensum surfaces [illegible] is associated [illegible] pyrexial reaction [illegible] series [illegible] one case [illegible] as I am aware [illegible] pneumothorax [illegible] must be very little [illegible]

[illegible]

It will be seen [illegible] scope of thoracoplasty [illegible] tuberculosis [illegible] because they are insignificant [illegible] already published—such [illegible] because they are so well [illegible] is difficult to assess

No surgeon will [illegible] merely because [illegible] duodenal [illegible] craft [illegible] for our statistics would [illegible] for whom the [illegible] indisputable that [illegible] to-day who would [illegible] must have consulted [illegible] it is held to account [illegible] otherwise hopeless [illegible] on anything like [illegible] is difficult to [illegible] itself in very [illegible] tuberculosis

[illegible]
[1] Macken [illegible] 10 167
[2] Schlatter [illegible]
[3] Kremer [illegible] 167
[4] O'Shaughnessy [illegible]
[5] Salzer [illegible]
[6] Proust [illegible] 19
[7] Spur [illegible]
[8] Hess [illegible]
[9] Hamm [illegible]
[10] Arkas [illegible]
[11] Bull [illegible]
[12] Symons [illegible]

## [illegible]SIS HYPERPNŒA TEST AND EPILEPSY

[illegible] SURGEON CAPTAIN P. J. GIBSON, D.M., B.Ch., R.N.

A [illegible] of patients are sent to hospital in the Navy with the diagnosis of Obs. Epilepsy, and a history of one or more fits the first occurring between the ages of perhaps 30 and 40. A very small number of these may have an organic cause such as cerebral tumour, cerebral syphilis, cysticercosis of the brain, or cerebral schistosomiasis which occurred recently in a patient in R.N. Hospital, Haslar. In passing it is well to point out that evidence of cysticercosis by x-ray examination of the skull and large muscles, in many cases will not be found even though the cysticerci may be present, as it is only when they are calcified that they become visible to the radiographer. MacArthur [1] has pointed out recently that calcification is only one of the changes which may occur three years after the death of the cysticercus, and although some parasites may die off quickly others may remain alive in the host for many years. It is then only when the silent stage of the disease has lasted more than five years that calcified parasites may become visible somewhere in the body.

There are, however, a number of patients who have been reported to have fallen down in a fit, not witnessed by a responsible person. In these patients an element of doubt remains as to whether they are safe to retain in the fighting services. A specific test for epilepsy would therefore be extremely valuable.

In 1934 Jacobson [2] founded a test on the theory that water retention in the body will precipitate a fit in predisposed persons. To induce this he administered water by the mouth in large quantities and accompanied this by hypodermic injection of pituesin (the pressor and anti-diuretic extract of the posterior lobe of the pituitary). In all those epileptics in whom a positive water balance could be induced fits were induced, whilst a series of normal controls had no fits.

Jacobson's patients were mostly children.

Clegg and Thorpe [3] in this country repeated this test in sixteen adult epileptics with seven controls. Twelve out of the sixteen epileptics had one or more fits during the test. When however the fits are very infrequent, even in definite epileptics a negative result may occur. The test therefore is not quite conclusive.

Collier [4] has pointed out that in epileptics when the attacks are frequent the alkali reserves are increased, and that by so simple a method as hyperventilation by making the patient breathe as deeply as he can for as long as he can, an attack is often brought on at once. He considers that this is the result of increased alkalosis by the excessive removal of $CO_2$. Further the good effects of ketogenic diet suggests that diminution of alkali reserve is inimical to the production of epileptic fits.

[illegible] of May [illegible] Jacobs [illegible] reaction test [illegible]

[illegible] patients [illegible] Six of these were controls [illegible] in hospital for [illegible] vagal fainting attacks one [illegible] alcoholism, who later developed symptoms suggestive of dementia praecox, and one of mental instability. Of the remaining eleven six were positive and five were negative. Three of these were subsequently diagnosed as epilepsy on clinical grounds, the three remaining were doubtful.

## DETAILS OF PITRESSIN HYPERPNŒA TEST

### Routine

*Previous Day*—

Check urine for twenty four hours from 0830
Order cream for two or three doses (ratio 1 gram 1 oo per lb of body weight)
Prepare rough graph
Diet or starvation as ordered by medical officer

*Day of Test (1st day)*—

Urine to laboratory prior to commencement
Measure and chart urine for twenty four hours from 0830
Weigh patient and ascertain 5 per cent increase point

*Commence injections Pitressin*

| | | | |
|---|---|---|---|
| 0530 | 0·2 c.c. | 0030 | 0·2 c.c. |
| 1230 | 0·1 c.c. | 0430 | 0·1 c.c. |
| 1630 | 0·0 c.c. | 0830 | 0·1 c.c. |
| 2030 | 0·5 c.c. | | |

Normally twenty four hours is the complete test period

*Hyperpnœa Test*

To be carried out after every injection
This consists of rapid stertorous breathing maintained for one minute. (Sometimes omitted during the night hours.)
*Every two hours* commencing 0830 400 c.c. water is given until there is equal to 10·7 oz.
*Weight* is registered four hourly
*Urines*—Specimen prior to test
" after test or if fit induced
" after three doses of cream
Test for general microscopical ketones, pH value

INFORM MEDICAL OFFICER IMMEDIATELY IF [illegible]
INFORM MEDICAL OFFICER IF INSUFFICIENT [illegible] WITHIN 5 HOURS OF LAST DOSE

Keep the cream in a cool place
See that patient wears the same amount of clothing [illegible] the weight is taken
Return to normal diet after sample of urine following [illegible] of cream has been passed
When two cases are undergoing test on the same ward they are to have screens

[illegible]

A [illegible] has [illegible] from [illegible] results of the [illegible] ng points

(a) Of the six [illegible] aged 15 to 17 and 17 respectively had had fits since childhood.

One [illegible] aged 14 had [illegible]

One [illegible] aged 40 had [illegible] in childhood (*petit mal*) and had attacks of nocturnal [illegible] for [illegible] months.

One aged 31 had [illegible] ing though he had epileptiform convulsions [illegible] for [illegible] preceding unconscious the cerebrospinal fluid had [illegible] cells (17 [illegible] with 70 per cent lymphocytes) slight excess [illegible] and [illegible] of colloidal gold curve, suggestive of some form of chronic [illegible] Blood and cerebrospinal fluid, Wassermann were negative.

(*b*) The five negative cases [illegible] the six controls, will now be considered —

(i) One aged 17 [illegible] attacks which do not appear to have been fits during a period [illegible] suffering from otitis media. He had one fainting attack [illegible] probably not an epileptic fit.

(ii) One aged 27 had [illegible] attacks in China, one of which was certainly [illegible] of alcohol no fits before or since, probably not an epileptic.

(iii) One aged 17 had [illegible] doubtful fits in the night within two months. None before [illegible] (last one eight months ago). These were considered to be [illegible] and not epileptic fits.

(iv and v) Aged 15 and 20 respectively. One had five fits during previous year and the other four fits in three years and attacks suggestive of *petit mal* before. These were considered to be definitely epileptics in whom the test had failed.

It is probable therefore that a positive test has obtained in 75 per cent of epileptics under investigation.

### *Urinary Changes during the Test*

(*a*) *In Positive Cases* —(i) *Acidity* of the urine in the six positive cases ranged from a pH 5·0 to 7·0. After the fits the pH was the same in three, less in one, and increased in two. After cream the pH was diminished in three, increased in one, and the same in two. Thus the pH of the urine was not of much guide in the progress of the case.

(ii) *Ketones* —It is worthy of note however that the ketones were only present in the patient before the onset of the fits and developed in three patients after cream.

(*b*) *In Negative Cases* —(i) Urinary acidity ranged from a pH of 5 to 7·0. After the test it decreased in one, remained the same in five and

increased [illegible] In one of the controls the test was stopped owing to vomiting This is not included After cream it increased in two remained the same in two and was diminished in the rest

(ii) *Ketones*.—All but two of those who failed to give a positive reaction including the patients subsequently diagnosed as epilepsy on clinical grounds developed ketones before the end of the test This demonstrates a possible source of error, namely, that the ketosis due to starvation was a




NATURE OF FIT — (1) Clonic Limbs and Tongue Often
(2) Tonic Tongue bitten
DURATION OF FIT — (1) 1½ minutes
(2) 2 minutes
INCONTINENCE — Nil

URINE OUTPUT TWENTY-FOUR HOURS PRECEDING TEST 31 *y*

| Specimens | S.G. | Reaction | Albumen | Sugar | pH value | Ketones | Microscopic |
|---|---|---|---|---|---|---|---|
| Pre-Epileptic | 1028 | Acid | Nil | Nil | 5.5 | Acetone Diacetic acid | Occasional epithelium cells |
| Post-Epileptic Fit | 1012 | Acid | Trace | Nil | 5.5 to 6.0 | Acetone Diacetic acid | Amorphous phosphates degenerate leucocytes Spermatozoa with tails |
| Post-Storm | 1020 | Acid | Nil | Nil | — | Acetone Diacetic acid | Few epithelial cells Amorphous phosphates |

URINE OUTPUT DURING FIT 31

factor in the prevention of the development of fits in the negative results given by true epileptics This seems all the more likely as the water retention obtained in the negative patients was 1½ to 5 lb and in the positive patients it was ½ to 4 lb

Kinnier Wilson [5] in an article on The Treatment of Epilepsy in

General Practice

ills attention to the benefit of a ketogenic diet and to the effects of starvation which tend to prevent epileptic fits The action of starvation may be the triple effect of (i) high fat diet (from the patient's own tissues) (ii) salt starvation or (iii) acidosis (due to the reduction of plasma bicarbonate) or (iv) possibly to the effects of dehydration

It has now been decided to eliminate the starvation factor during the pitressin hyperpnoea tests in future, and it is hoped that a further series of cases will be forthcoming to show the effect of this

A typical weight chart of a positive hyperpnoea pitressin test and urine findings is attached

*Summary*.—A pitressin hyperpnoea test for epilepsy has been described which it is believed gives a positive reaction in 75 per cent. of epileptics

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## THE MEDICINE MAN OF MALAYA

By Surgeon Lieutenant-Commander J. Mansel Rees, R.N.

The *bomor* or medicine man, still plays an important part in the remoter regions of Malaya. His popularity, like that of his western counterpart in the Middle Ages, depends mainly upon the superstitious nature of the people with whom he deals and the success or otherwise of his various practices.

The *bomor* is frequently a specialist, and whereas one may possess an expert knowledge of herbs and their properties another may specialize in genuine or magic. They each play their respective parts in the everyday life of the people who have great faith in them.

The Malays are Mohammedans, and many of the *bomor's* beliefs appear to be derived from Arabian medicine, especially his beliefs concerning the origin of disease from the four elements earth, fire, air and water. His instructions concerning diet in certain diseases are sometimes not unlike those of the old Greek physicians whose system of medicine, based on the four elements, remained practically unchanged in Europe until the seventeenth century.

The village *bomor* usually has a sound knowledge of the use and properties of the plants at his disposal, and no doubt does quite a lot of good work amongst his patients. For example, he uses the leaves of the *Kechubong hitam*, a member of the nightshade family, as an anodyne. The leaves are rolled with chalk and the resulting mixture applied to bites or

[illegible]

Other [illegible] are based on [illegible] scientific principles. Some of these such as the use of hairs from an elephant's tail as toothpicks in cases of toothache and burnt tiger's whiskers with cocoanut oil prescribed for internal use in rheumatism can have but little success.

A different type of *bomor* is one who specializes in magic. His is an art which suits the superstitious nature of the average Malay who considers the majority of his misfortunes are due to the influence of evil spirits. This class of *bomor* possesses a cure for each of the evil spirits causing smallpox blindness and other maladies. His methods usually require the exhibition of much play acting and the utterings of incantations according to the variety of spirit with which he has to deal. He may be requested amongst other things to heal the sick, recover lost property or to find stolen goods. He sometimes proceeds to make friends with the devil and enlists his aid in calling up spirits which are antagonistic to the evil spirit under consideration. But his methods vary, and his incantations vary too. Doubtless his failures are neutralized to some extent by his successes in dealing with less difficult problems such as invoking a spirit to harm his employer's enemy. And in this way the people continue to have faith in his extraordinary powers.

Charms play a big part in the life of most Asiatic people and the Malay is no exception to the rule. The *bomor* can produce charms for almost any eventuality, from one for protecting a client from illness to another for making him courageous. Many of these charms are spoken by the *bomor* and are accompanied by a good deal of ceremonial. In the case of sickness he often blows on the patient, the disease in this way being blown out of his body. Sometimes an evil spirit is got rid of by smoking it out, and the unfortunate victim is smoked over a fire.

The *bomor* usually possesses an antidote for most poisons either a herbal one or a charm. 'Snake stones,' as in other countries are used in cases of snake bite, the stones are hygroscopic and probably absorb some of the poison when applied to the lesion. Amulets are commonly worn by Malays, and many consist of texts from the Koran enclosed in small metal cases which are hung round the neck, wrist or waist. These are supposed to protect the wearer from a great variety of misfortunes.

Malaya possesses a very large number of poisonous plants, and many Malays apart from the *bomors* have an unhealthy knowledge of their properties. Many of the people are expert poisoners and poisoning to kill or merely to cause annoyance to an enemy is still practised.

Thieves for example, may throw a mixture of powdered glass and sand into the faces of their pursuers. Powdered glass is also used as an internal poison and is sometimes mixed for this purpose with the hairs of certain bamboo trees and the mixture added to food. The resulting gastro enteritis may be severe.

Another method of poisoning is to smear the [illegible] is material on one side of a knife which is used to divide some article of food such as a watermelon The portion which has been in contact with the poison is then given to the victim to eat Arsenic and potassium cyanide may be used in this way

Other substances which have been used as poisons are the young shoots of the betel-nut tree (*pinang*) as an abortifacient the latex of the papaw fruit tree for the same purpose the sap of the *upas* tree as an arrow and dart poison and the fruit juice of the *langkap* palm which after boiling, is added to some liquid or other and given the enemy to drink There are numerous other poisons known to the Malay and much ingenuity is displayed in their preparation and even more in their administration to the victim

## Clinical Notes

### NEW TREATMENT AND CURE OF PYORRHŒA

By Surgeon Lieutenant Commander (D) DOUGLAS BARKER L.D.S.R.C.S.

Owing to the successful research work by Dr Gottlieb of Vienna and Dr Wilfred Fish of London, it is now possible to cure many cases of pyorrhœa without recourse to multiple extractions of the teeth The process is comparatively easy, but rather tedious and takes up a good deal of time.

Pyorrhœa always commences with a marginal gingivitis, deposition of tartar, and swollen and inflamed interdental papillæ If it is not treated at the onset the periodontal membrane will gradually be stripped away from the tooth, resulting in pocketing round the teeth These pockets provide breeding places for the invading bacteria and are extremely difficult to clear with certainty They soon become reinfected

Fish's researches have proved that the periodontal epithelium tries to attach itself to the tooth below the seat of infection, but is continually destroyed as the pockets increase in depth The vicious circle continues till the teeth practically fall out

Fish has found that the surgical removal of the gum tissue forming the pockets, when the latter are of a depth of between 2 to 4 mm followed by packing of zinc oxide and oil of cloves, results in greatly improved condition of the gums tightening up of the teeth and rapid improvement of the health in many cases

Twenty cases of pyorrhœa in various stages have so far been treated in H.M.S. *Vernon* with varying degrees of success One case was not completed as the patient was going on pension and thought he would "have them all out when he was outside. Three cases were not very successful as the pockets round some of the teeth were about 5½ mm deep and the teeth were very loose Improvement was noticed, however in the general conditions of the gums which were less spongy and of a more healthy colour and the teeth appeared to be tighter These cases were definitely experiments and of interest from that point of view

The cases have not been picked Some are commissioned officers and others ratings All have expressed deep satisfaction with the results so far obtained

The ultimate success in all of these gingivectomy cases depends upon three factors —

(i) The [illegible] by [illegible] cautery or chemical agents of all tags of gum particularly between the teeth

(ii) Thorough and conscientious removal of all tartar from the teeth after the zinc packing is removed

(iii) The co-operation of the patient is as important as the other factors—in keeping the mouth clean and using intelligently—the very fine tooth picks known as 'Gold Medal Brand' at bedtime each night The massaging of the gums with these is essential It aids in restoring and keeping up the tone of the gums It also prevents the growth upwards of the gum which would only form pockets—the epithelium not becoming reattached once it is stripped from the tooth This is particularly the case between the teeth

If the pockets measured on the labial and lingual side only are not more than 2 mm in depth they can be removed usually without gingivectomy Thorough scaling and cleaning out of individual pockets and wisps of wool round a bristle dipped in hydrogen peroxide, followed by packing with zinc, left in for at least five days, is sufficient After its removal the gum has shrunk later-deutally, is not so tender, and will not bleed easily

In dealing with the subjects of interdental packing it is to be noted that cases of Vincent's disease of the gums clear up rapidly if spaces are lightly packed with zinc oxide and cloves This should follow the application of pure carbolic acid to the necrotic tissues controlled by glycerine

It is too early to state that this treatment for pyorrhœa is lasting The improvement in the condition of the gums is very marked This with the improvement of general conditions as noticed by the patients gives very good reason for believing that it is no longer necessary to remove all teeth on account of pyorrhœa

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## TREATMENT OF SCABIES WITH BENZYL BENZOATE

By Surgeon Commander C Ratcliffe R N

In two respects the treatment of scabies in the Navy is unsatisfactory

The old sulphur ointment treatment required at least three days followed by a quarantine period Relapses were common and secondary staphylococcal infections and dermatitis occasionally occurred

In R N Hospital, Chatham the Danish ointment treatment was then introduced and was successful in clearing up the scabies in twenty four hours, but so many cases developed dermatitis that they had to stay in hospital for a week or ten days undergoing further treatment Therefore I decided to try the benzyl benzoate treatment

The method is to strip the patient on admission scrub his body thoroughly with soft soap B P, especially rubbing this into the infected areas Then he remains in a hot bath, 100° F, still rubbing soft soap into the skin Whilst still wet from his bath he has the benzyl benzoate solution brushed into his body by means of a soft nail brush This solution is composed of benzyl benzoate, isopropyl alcohol and soft soap, equal parts of each This should take at least ten minutes to do thoroughly

The patient then allows the solution to dry in When dry the painting with the lotion is repeated The patient then dries himself and dresses Next morning he has an ordinary warm bath and is then usually cured but occasionally in very severe cases a second day's treatment is required

In my opinion, this treatment is ideal for scabies for the following reasons —

At the most, two days treatment is required, usually only one day No

cerebrospinal fluid withdrawn 10 c c mu
ed

spinal fluid withdrawn and 20 c c antimeningococcal
meningococci seen Further punctures and retrathecal
on May 12, 13 and 15 He made normal progress
June 16

acute act Began to feel out of sorts about May 12,
days he vomited on several occasions He had a dry
101 to 103 8 F Lumbar puncture was performed on his
d clear cerebrospinal fluid under normal pressure withdrawn

He was admitted to R N Hospital, Haslar, on May 15 He complained of severe frontal headache and feeling very tired Temperature 103°, pulse 90, respiration 28 He looked very thin and ill His tongue was dry and furred There was no rash or neck rigidity, and Kernig was negative There were a few scattered ronchi in lungs Spleen not felt He leucocyte count was 8 000 There was a light cloud of albumin in the urine Agglutination for typhoid group and *M melitensis* negative

May 16 —Complaining of severe headache Vomited Temperature 103° F, pulse 96, respiration 44

May 17 —Had a rigor during the previous night Temperature 103° F, pulse 84 respiration 31 B O 1

May 18 —Unable to sleep Lethargic Lumbar punoture performed Clear fluid under normal pressure Report on fluid 4 lymphocytes per c mm , sugar, 48 mg per 100 c c chlorides 680 mg per 100 c c , slight increase of globulin normal gold curve W R negative no organisms seen in direct film culture sterile *X* ray of chest showed a small calcified focus in left lower lobe , no areas of infiltration seen

May 19 —No change in general condition Temperature 101° F pulse 80 respiration 30 No malarial parasites seen in blood film Culture of faeces for typhoid group negative

May 20 —Very drowsy and delirious Constipated very poor result from enema Temperature 100 4° F , pulse 112

May 21 —Restless and delirious Temperature 101 2° F , pulse 120, respiration 24 Widal agglutination negative Slight albuminuria Urine culture sterile

May 22 —Very lethargic Temperature 100 4° F , pulse 120

May 23 —Coma vigil Temperature 104 2° F , pulse 112, respiration 36 Lumbar puncture performed, 20 c c slightly turbid fluid withdrawn and 10 c c. antivalent antimeningococcal serum introduced intrathecally Report on fluid 106 polymorphs per c mm , sugar 52 mg per 100 c c , chlorides 630 mg per 100 c c , gold curve 0001222332 (meningitic curve) no organisms seen in direct film culture sterile

Blood sugar 137 mg per 100 c c Blood urea 59 mg per 100 c c Slight albuminuria No glycosuria Blood culture negative

May 24 —Unconscious Temperature 104 8° F pulse 116, respiration 50 Lumbar puncture performed, 20 c c turbid fluid withdrawn 10 c c inctivalent antimeningococcal serum intrathecally 20 c c antimeningococcal serum intramuscularly

Report on fluid 9 000 polymorphs per c mm tubercle bacilli seen in direct film

Later on, May 24, Temperature 106 F pulse 150 respiration 56 Died

(3) D G , aged 22, Ordinary Seaman Went sick on May 14 General malaise Stated to have had a high temperature and neck retraction Lumbar puncture performed in his ship Turbid fluid withdrawn and inctivalent anti meningococcal serum introduced intrathecally He was admitted to R N Hospital, Haslar at 19 00 hours on May 15 Temperature 101 6° F , pulse 120 respiration 40 He was unconscious and cyanosed There was marked head

[illegible] and Kerr, [illegible] performed [illegible] cerebrospinal [illegible] antimeningococcic serum intrathecally and [illegible]

Report on cerebrospinal [illegible] in Gram positive and negative organisms [illegible] meningococci (type 3) grown

During the night he had [illegible] respirations [illegible] He died at 05 40 on May 16

Three types of meningitis [illegible] in the [illegible] work must surely be of unique interest

Autopsy was refused in Cause [illegible]

I am indebted to Dr J Thom [illegible] M O Isolation Hospital Southampton for the notes on the first case

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## A CASE OF PUNCTURED WOUND RIGHT KNEE

By Surgeon Commander T N Darcy R N

This case was one which presented problems in treatment It is obvious that a disastrous result may follow on what may appear to be a trivial injury in the region of the knee

D S aged 34 chief stoker, was cutting linoleum in his house on April 18 when the knife slipped and pricked him very slightly about two inches above the right patella and a little to the outer side of the limb Two hours after the accident his knee swelled up and became painful so that he could not sleep He was admitted to hospital on April 20, when he complained of constant [illegible] pain in the right knee joint Temperature 99° F pulse 80 There was only a small wound in the region of the prick which appeared to have almost healed The joint was very swollen All attempts at movement caused much pain and it was held in the usual position of rest The limb was placed on a splint and 3 oz of blood-stained fluid were withdrawn from the joint A leucocyte count showed 12 000 white cells Streptocide was administered until the report on the aspirated fluid showed heavy and pure growth of *Staphylococcus aureus*

On April 22 and 23 40 c c were withdrawn from the joint and at the latter operation the fluid was seen to be thicker Pain continued to be acute and as the condition was obviously not subsiding but becoming worse (temperature 104° F pulse 96), the knee joint was opened on April 24 and drained through the suprapatellar pouch

He seemed to improve somewhat after this operation, but very little discharge came away although several sloughs of membrane were removed at the time of the operation

On April 26 his condition again gave rise to great anxiety and the question was debated whether to open the joint or to amputate He was obviously suffering from a heavy blood infection, and it was thought that he might not stand the shock of an amputation

He was given a blood transfusion after exsanguination (100 c c withdrawn and 300 c c transfused) and under a general anæsthetic the knee joint was laid widely open and Carrel Dakin's treatment instituted After this operation the pain and swelling disappeared and in a very short space of time all local symptoms appeared to have been satisfactorily dealt with The leucocyte count was now 31 000 The temperature was 100, pulse 125 and of poor volume For two days he appeared to improve, but on April 29 the general condition rapidly deteriorated and death occurred on April 30 in spite of all efforts to combat the profound toxic state His wife later said that she considered he had been in indifferent health

[illegible] report
[illegible] the usual
[illegible] Dr. [illegible] by the
[illegible] Cases
[illegible] by the
[illegible] right
[illegible] The
[illegible] from
[illegible] very
Lungs [illegible]
Kidneys [illegible]
Heart [illegible] Right side of the heart [illegible] pulmonary artery [illegible]
Liver [illegible]
Spleen [illegible]
Stomach [illegible]
Bowels [illegible]
Generative [illegible] (an [illegible])

TRAUMATIC [illegible]

[illegible]

[illegible]

cheeks and [illegible] exceeded in the [illegible] Large [illegible] air bubbles were lying close to fascial planes was confirmed by the patient feeling crepitus all along the forearm on moving the fingers

Owing to the late hour an x-ray picture of the arm could not be obtained. The wound was dressed with acriflavine and a prophylactic injection of anti-tetanus and anti-gas-gangrene serum was given. As the patient said he felt perfectly well he was kept under observation for some time and then allowed to go home.

The crepitus was scarcely detectable in some parts of the forearm when the patient attended next morning and an x-ray film showed "slight surgical emphysema." The hand had decreased in size and most of the large pockets of air had escaped via the palm wound. The temperature was normal.

The patient had no further trouble and reported a month later that there was still slight pain at the site of air entry—a numb feeling and swelling of the hand and wrist after a night's work.

## FRACTURE OF THE PISIFORM

By Surgeon Commander P. B. POLLARD, R.N.

A band boy of the Royal Naval School of Music aged 16 reported on February 22, 1937, with pain in the left wrist. He stated he had fallen downstairs on the previous day and had struck the anterior surface of the left wrist on the edge of a step.

Examination showed generalised fulness of the wrist, particularly on the



Fig. 1.

surface but no of [illegible] movements p[illegible] is pain + [illegible]y flexion and add[illegible] confined t[illegible] surface al th[illegible] wrist and was most [illegible] ulnar side

*X* ray (fig 1) showed a [illegible] e of the pisiform [illegible] ght gaping of the fragments

An unpadded dorsal pl[illegible] reaching from [illegible] knuckles with the forearm in [illegible] the wrist to slight ul[illegible] Full movement of the thumb and fingers was encouraged and he continued his musical instruction playing [illegible]



*X* ray six weeks later showed [illegible] the line of fracture was still clearly visible It was not until May 11 that it was proved that union had taken place (fig 2) The plaster was then removed and full movement of the wrist was possible without pain though there was still slight tenderness over the pisiform

Fracture of the pisiform is comparatively [illegible] Schlee records thirteen cases in 437 injuries to the carpal bones Probably in this case it must be caused by direct violence as it is hard to imagine any sudden contraction of the flexor carpi ulnaris comparable with that of the quadriceps extensor cruris which produces a fracture of the patella

A noteworthy point in this case is the length of time necessary for union to take place eleven weeks in a young boy as compared with the average of six weeks for a recent fracture of the scaphoid

REG[illegible]

[illegible]

[illegible] cognized [illegible] entity [illegible]
[illegible] [illegible] of the [illegible]
[illegible] [illegible] this part of the [illegible]
[illegible] [illegible] and reported [illegible] cases and [illegible]
[illegible] and the [illegible] the case [illegible] tuberculous [illegible]
[illegible] [illegible] [illegible] [illegible] obstruction
[illegible] many [illegible] [illegible] the [illegible] literature [illegible]
[illegible] that [illegible] [illegible] [illegible] the [illegible] from the
[illegible] the sigmoid [illegible] [illegible] the [illegible] portion [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible] [illegible] reported.

[illegible] The [illegible] [illegible] [illegible] and [illegible] [illegible] all the [illegible] [illegible] [illegible] [illegible] [illegible]

[illegible] Regardless of the almost hopeless [illegible] he besought the per[illegible]ce of another operation which would [illegible] choice of the fistule

After preliminary blood transfusions [illegible] lumen was opened on March 31 1937 A resection of that portion of [illegible] stomach involved in the gastro enterostomy was carried out This [illegible] a very lengthy separation of adhesions and the site of the original operation (by ligature) operation could not be identified owing to the mass of dense adhesions in this area The portion of the stomach resected was denuded of mucous membrane and imbedded and sewn over the stoma into the small intestine The suture line was strengthened by sewing over it a fold of the great omentum

The condition of the patient was extremely poor during the operation and he made bet little response to intravenous saline and glucose, ephedrine &c His pulse was almost uncountable when he was removed to the ward and he collapsed and died about four hours after the operation presumably when the stimulating effect of the ether which was used as the anæsthetic had passed off

## Reviews.

WHAT IS OSTEOPATHY? By Charles Hill M A, M D, D P H, Deputy Medical Secretary Medical Association and H A Clegg, M A M B M R C P Deputy Editor of the *British Medical Journal* with a Preface by H G Wells First edition Pp 217 7 photographs 3 black and white illustrations London T M Dent and Sons, Ltd Price 7s 6d net

Osteopathy, according to its advocates, is at complete variance with orthodox medicine One or the other is right The authors of this volume are concerned not with the gains which people derive from osteopathy as indeed they do sometimes from Christian Science and other cults, but in the expounding in non technical language of the theory and practice of this challenging system

Osteopathy began in the hand of a certain Andrew Taylor Still in the year 1874 and like many other original and unorthodox systems was introduced into England from the United States of America Still was born in Virginia and practised in Tennessee He was educated to many kinds of work He was minister doctor farmer and a practical millwright In addition the mantle of the Old Testament prophets had descended upon him In the midst of this versatility he appeared to lack or to ignore that form of knowledge which is only acquired by experiment by trial and error by learning from others experience and by tool headed processes of induction His medical education such as it was combined a love of natural history, shearing of sheep skinning of animals, and generally acting as the countryside or doctor or vet as occasion might require One genuine scientific curiosity he did possess namely a very real interest in comparative anatomy

The gospel preached by Still amounted to this that disease was caused by disorder of a joint, particularly the hip joint that the displacement of the joint caused an inequality of exchange between arteries and veins and consequent mal excretion Among other things he was particularly interested in the cerebellum hood of the floor of the skull He thought that dislocation of the vertebræ at the upper part of the neck initiated many diseases, and that this interfered with drainage of the structures of the head and neck He regarded himself as an adjunct to orthodox medicine but claimed to cure piles obesity, diabetes shaking palsy eczema debility St Vitus's dance, dandruff and pimples on the face by correcting dislocations of the bones of the spine He adopted a negative attitude to all remedies used in orthodox medicine Indeed he thought

the ... to its own cures but ... it from the cruder forms of surgery Unlike other ... honoured her prophet, and gave her charter to the osteopathic prof...

Osteopaths have founded themselves on Still ... Some have paid lip service throughout but most have modified his somewhat crude principles as new scientific truths became manifest, and more particularly in accordance with the changing fashions of medical thought They now admit the potency of such things as sera, endocrine preparations and certain specific drugs The "joint" theory of Still has become concentrated upon the joints of the spinal column and they have developed an entity called the osteopathic lesion In its primary form the lesion is supposed to be caused by displacement just short of dislocation, of the vertebral joints This they say causes obstruction to vessels and to the vasa vasorum of nerves, by injury to ligaments and to the connective tissues about these joints They claim that people are constantly injuring their vertebral joints, by jolts and jars, by twists and strains, even turning over in bed is enough to disarrange these delicate structures They admit, on the whole that x rays do not demonstrate this lesion, because the oedema and other changes which they postulate would not be visible on an x ray plate They have now developed the osteopathic lesion into something much more complicated and they tell us that the lesion once established can affect segments of the cord including the whole of the vegetative system It is this claim that makes their system so comprehensive Sympathetic and parasympathetic systems permeate the whole organism thus do they explain their power of curing a whole omnibus of disease by manipulation of the spinal column But they go further even than this They reverse the well known theory of referred pain and tell us that if an organ say the stomach, is at fault, that this may be due to an osteopathic lesion at the appropriate level in the cord for stomach innervation They admit the lack of scientific evidence for this theory but say they have full belief in it because of their experience When pressed on this question in the recent inquiry at the House of Lords they became somewhat nebulous both in describing the lesion so that others could understand it and on the evidence which could be produced in support of this reversible theory—the viscero somatic reflex as they call it Further pressed they fall back on their leader, Still, but were once back at such fashionable questions as nutrition

Osteopathy does not set out as a manipulation theory Sir Herbert Barker has to explain on every possible occasion that he is not an osteopath For osteopathy to set up as a rival system of medicine is, as H G Wells remarked "impudent balderdash" But since osteopathy makes this claim osteopathy must stand the tests of scientific criticism Its much vaunted bulletins certainly fail in this and in the recent inquiry sponsored by members of the House of Lords the osteopaths made a sorry showing Indeed it seems clear that noble Lords themselves failed to distinguish between the manipulative side of surgery and what osteopathy sets out to be

It is just possible that those of us with long orthodox experience may consider that the osteopathic lesion is rather too good to be true Could not the whole matter be one of expert manipulation, for indeed we willingly give them that credit plus the element of suggestion, which is so difficult to assess even among the most experienced?

The book is most stimulating both for practitioner and for layman Theories like osteopathy always appeal to the disgruntled the offended and the irrational There is a glamour about reducing the whole of Nature and its disorders to a common denominator The spinal column theory with all its comprehensiveness is just the sort of thing to appeal to these and faith removes mountains

This book of Hill and Clegg is at once an excellent exposition of the claims of the osteopath and the fallacies inherent in a semi educated creed as well as a first-rate key to the type of mind that finds attraction in founding itself on credulity

lymphatic disease in neurology [illegible] in tropical diseases. Numerous illustrations have been added.

This book is so [illegible] a vade mecum [illegible] such a book of reference as to last that it is little wonder that a fifth edition has been found to be a necessity after four years. The edition printed on India paper is, of course, light and convenient and easy to carry about.

Dr. Price has modestly expressed the hope that this work will continue to be of service to teachers, consultants, practitioners, and students. He need have no qualms on that score. The book is more than "of service", it is almost a *sine qua non*.

MODERN TREATMENT IN GENERAL PRACTICE. Volume III. Edited by Cecil P. G. Wakeley, D.Sc., F.R.C.S., F.R.S.E., Fellow of King's College, London, Editor of *The Medical Press and Circular*. 1937. 436 pages. 54 figures. 16 plates. London: *The Medical Press and Circular*. Price 10s. 6d.

One of the greatest difficulties experienced by those of us no longer in teaching centres is to discover modern approved lines of treatment in Medicine and Surgery. There is so much ink spilled in contemporary medical publications that sorting the wheat from the chaff becomes a seemingly impossible task.

During recent years several medical journals have been publishing series of articles written by recognized authorities, and most of these have later been published in book form. Among these have been a series of articles on "Modern Treatment in General Practice," in *The Medical Press and Circular*. Already two volumes of these excellent monographs have been published, and we now welcome the third.

The editor and author of our article, Mr. C. P. G. Wakeley, needs no introduction to naval medical officers. He has chosen well in his collaborators for the remaining fifty chapters. The subjects are well varied. In the reviewer's opinion every doctor, no matter what his particular line or specialty should keep himself abreast of contemporary teaching in all branches of medicine. It is owing to such books that this is possible.

It would be an invidious task to attempt to review each article in this series; let it be said that there is none which will not repay careful reading. The book is of convenient size, the type is easy to read and there are very few misprints.

No one will regret the half guinea he expends in adding it to his library.

COMMON SKIN DISEASES. GENERAL PRACTICE SERIES. By A. C. Roxburgh, M.A., M.D., B.Ch.-Cantab., F.R.C.P.Lond., Physician in Charge of the Skin Department and Lecturer on Diseases of the Skin, St. Bartholomew's Hospital; Consulting Physician and Lecturer, St. John's Hospital for Diseases of the Skin; Dermatologist to the Royal Masonic Hospital; Editor of the *British Journal of Dermatology and Syphilis*; Vice-President, Section of Dermatology, Royal Society of Medicine; late Vice-President Section of Dermatology, British Medical Association; Corresponding Member of the Danish Dermatological Society. Fourth edition. 1937. Pp. xx + 401, with 8 plates and 166 illustrations. H. K. Lewis and Co., Ltd., 136 Gower Street, W.C.1. Price 10s. net.

The fact that Dr. Roxburgh's book on skin diseases has already reached a fourth edition is a tribute to its popularity. The science of dermatology, in common with other branches of medical knowledge, advances steadily, and Dr. Roxburgh has incorporated in this edition the latest advances that have been made.

In view of the extensive arsenical therapy which is practised in the Naval Medical Service, and the increasing usage of gold therapy, we welcome the new paragraphs that appear in this edition discussing fully the dermatitis that may arise after the use of these drugs and the contra-indications for their repetition.

The treatment [illegible] and varicos[illegible] could be summed up [illegible] hospital [illegible] of cases are treated [illegible] a weekly [illegible] section on this report [illegible] has been [illegible] on [illegible] nodosum and [illegible] [illegible] but [illegible] [illegible] stegi [illegible] on page 26) on the [illegible] Skin [illegible] [illegible] dinoc [illegible] of a number [illegible] suspect [illegible] [illegible] [illegible] [illegible] useless because the [illegible] [illegible] [illegible] [illegible] Even if one protein [illegible] [illegible] reaction [illegible] test is repeated a few [illegible] [illegible] [illegible] reaction.

Four plates have been [illegible] [illegible] [illegible] have been added but [illegible] [illegible] [illegible] an unwieldy size.

As we said of the previous [illegible] strongly recommend it [illegible] medical officers.

CHRONIC RHEUMATIC DISEASES. BEING THE THIRD ANNUAL REPORT OF THE BRITISH COMMITTEE ON CHRONIC RHEUMATIC AFFECTIONS OF THE ROYAL COLLEGE OF PHYSICIANS. Edited by C. W. Buckley, M.D., F.R.C.P. Published by H. K. Lewis and Co. Ltd. Price 10s. 6d.

It is a pleasure to read this book and to realize that [illegible] campaign is being conducted against such a [illegible] the public weal as the Chronic Rheumatic Affections. The [illegible] third annual report of the Committee appointed by the Royal College [illegible] and it is devoted to nine sections each [illegible] by [illegible] authority. In addition there is a chapter on Clinical Conclusions [illegible] another in which the Editor [illegible] on the subject is [illegible].

The first thing which strikes the [illegible] on reading this book [illegible] unbiased attitude adopted by the contributors. Possibly this is due [illegible] that they are members of a Committee and hence they no [illegible] subject as redskins with axes to grind. If this simple [illegible] prove that even if Corporate Bodies [illegible] their virtues too [illegible] correcting unfettered individualism. This [illegible] attitude is brought out by C. C. Okell in his chapter on "Anæmia and Rheumatic Arthritis" in which he appeals for a search [illegible] [illegible] says the time has passed when [illegible] opinions should be the basis of assessment.

When a well organized Committee attack such a problem as rheumatism one hopes that prevention [illegible] But in the case of this respect the report is disappointing. Not that the [illegible] is not being sought but because so little is yet known [illegible]. For instance diet and vitamins have been investigated [illegible] but [illegible] [illegible] of rheumatism are beneficially influenced by [illegible] [illegible] but the effect is rather to alleviate than to [illegible] and [illegible] cannot yet be regarded as the causes of [illegible] must [illegible]. The [illegible] book C. W. Buckley writes the article on "Diet." Both he and [illegible] relationship between [illegible] and chronic rheumatism and [illegible] further study of the detoxifying power of the liver is important. But it will [illegible] must be admitted that we are still in the dark as to [illegible] of these [illegible] and must perforce fall back on such generalities as "toxæmia" [illegible] cartilage absorbed," or the rheumatic diathesis" to account for [illegible].

Turning from the preventive to the curative aspect [illegible] that a steady advance is being made along many [illegible] [illegible]

[illegible] of all this problem. [illegible] of dispensing [illegible] is refreshing to [illegible] access of more [illegible] and sympathetic [illegible] humane nature. The [illegible] of the [illegible] of medicine, in [illegible] doses and their [illegible] on thyroid [illegible] are particularly illuminating.

The naval [illegible] equally with [illegible] to consult will find a invaluable [illegible] empirics relating [illegible] chapters. His teaching on General [illegible] Diet could with [illegible] be read and taken to heart by all laymen.

A comprehensive [illegible] [illegible] [illegible]

Researches Published from the Wings and Other Sources to the London Hospital during 1936. By various Authors. 1937. London: H. K. Lewis and Co. Ltd. Price 5s. bd. n.

The present volume of this familiar series [illegible] the standard of excellence set by its predecessors. It starts [illegible] appearing once again in the same unattractive *form* [illegible] criticized upon in one or two [illegible] for some years past. The [illegible] much to be regretted from medical periodicals dealing [illegible] Medicine and Surgery but also in Pathology, Bacteriology and other [illegible] of medical science.

Professor Bedson and Dr. McCallum (1936) [illegible] their researches on psittacosis. This interesting disease [illegible] subject of close study at the London Hospital for many years, but recently [illegible] the fact that the causative agent of the disease is a filterable virus is [illegible] apparently recent. In January, 1930, at a meeting at the Royal Society of Medicine, Dr. Bedson, who was then working with Dr. G. T. Western at the London Hospital, suggested tentatively that the disease was due to a filterable virus and reported the isolation of such from a parrot, demonstrating the possibility that this virus might be responsible for the disease both in man and bird. At the same meeting, however, other speakers strongly urged the claims of organisms of the Salmonella group, especially *B. psittacosis* Nocard, which was first described in 1893. It is now recognized that this organism, which is the cause of a fatal epizootic enteritis in parrots is identical with *B. aertrycke*. The present paper is concerned with the antigenic composition of the virus and with its [illegible] cultivation in living chick embryo media. They should be read in conjunction with Dr. Bedson's and his co-workers previous researches and with a recently published Special Report of the Medical Research Council on virus research (Price 10s).

The Lumleian Lectures for 1936 on Enlargement of the Heart, by Dr. [illegible] Parkinson are included in the volume, perhaps unnecessarily, for the lectures must have been read in the original publication by all who take any interest in modern advances in our knowledge of cardiology. Dr. Price Scott, collaborating with Dr. W. Thompson (1936), also contributes a most practical and helpful article on the subject of a mercurial drug containing [illegible] sodium salt of trimethyl cyclo pentan dicarboxylic acid allyl amide linked to mercuric hydroxide combined with theophyllin. Its shorter name is [illegible] its trade name is Novorit. This substance has been prepared in the form of a suppository containing 0.5 g. in cocoa butter. From personal experience they conclude that this preparation is a rapid and effective diuretic, free of toxic effects in heart failure, the diuresis being increased as in the case of salyrgan given intravenously by the previous administration of ammonium chloride.

Of outstanding interest in Surgery is the report by Professor Lloyd Davies (1936) on the Late Results to the Operative Treatment of Pulmonary [illegible]. All those interested in cerebral surgery will refer to the [illegible] Section at

[illegible]

WITHERING [illegible] By Louis H. Roddis, M.D. [illegible] Illustrated. [illegible] Paul B. Hoeber [illegible] New York [illegible] 1936.

Commander Roddis, who [illegible] biography of Jenner, has now [illegible] study of William Withering. [illegible] all the available authentic information on W[illegible] interests, especially his great classical [illegible] foxglove into medical practice.

William Withering, born in 1741 [illegible] of Edmund Withering, a successful practi[illegible] medicine in the University of Edinburgh [illegible] 1766. His final thesis for his degree was [illegible] Sore Throat, interesting in view of the [illegible] cytosis.

He began practice in Stafford and [illegible] town infirmary for the poor. Three years [illegible] necessary to extend his activities [illegible] exceed one hundred pounds a year [illegible] had a lucrative practice. It is interes[illegible] Stafford by Thomas [illegible] regarded as the pioneer of the [illegible] use of digitalis.

In 1776 he published his first book [illegible] English, which for the next fifty years was very popul[illegible] best seller.

His attention was first directed to the use of the [illegible] plant appears to have been used [illegible] in the form of foxglove tea. [illegible] Commander Roddis [illegible] like Withering to study in a scientific manner the [illegible] introduce it to the Pharmacopoeia, just as Jenner [illegible] tradition of cowpox and by study and observation [illegible] smallpox vaccination. [illegible] George [illegible] described the use of the foxglove by [illegible] and indicated [illegible] the use of digitalis [illegible] shire district. After many years of research Withering [illegible] famous work "An Account of the Foxglove [illegible]" a reproduction of the last section of this classic book [illegible] entirety. Commander Roddis quotes the opinion of [illegible] greatest pharmacologists of our generation [illegible] exaggeration to say that the use of digitalis [illegible] century was precisely that [illegible] Withering not only introduced digitalis [illegible] principles of its use, which are unchanged to-day. [illegible] of Vienna, perhaps the greatest [illegible] fully endorses this opinion. At a meeting of the British Medical [illegible] 1910 paying tribute to the great [illegible] Withering he [illegible] as Withering abandoned large toxic doses and prescribed smaller ones [illegible]

[illegible] me to use in reading to [illegible] digitalis a fair [illegible] I should acquire a reputation [illegible] ing heart patie[illegible] will be from my giving it this way d[illegible]ds in cases where [illegible] textbooks forbid it

[illegible]ation delivered in connection with the exhibition of th[illegible] opening of the General Hospital Birmingham In [illegible] saying that after his sometimes over dramatic [illegible] the last decades he was still, and even more strongly of the [illegible] ff ended his oration with the following sentence To the [illegible] never forget Withering who knowing nothing at all about the [illegible] of digitalis on the heart overthrew gave the profession a work [illegible] in his account of the foxglove

In 1785 Withering s health broke down and he died in 1799 from pulmonary [illegible] One who had visited him a few days before his death made in all [illegible] sympathy a pun that will always be classic The flower of English [illegible] is indeed Witheringi

[illegible]s whole story of Withering s life and his achievements, not only in medicine, but in the [illegible]ds of botany chemistry and geology, are most charmingly related by the artist who also gives us many vivid insights into the social as well as the scientific problems of the period For example in the present time when the question of the arbitrament of arms is so prominently in our minds, it is interesting to read that one pessimist tells Withering that in the present state of the country it is insane to marry and urges him to buy a sabre, rifle, a brace of pistols muskets with bayonets, and a blunderbuss

As the author remarks A pretty fair arsenal He thinks that mobs will overrun the cities as they did Paris and is certain that a revolution is coming

Commander Roddis concludes his book with an appendix of bibliographical notes and a complete list of Withering s scientific works and papers The volume is beautifully illustrated and its general *format* beyond reproach

We congratulate Commander Roddis and in so doing the Medical Corps of the United States Navy on this fascinating memoir

CLINICAL CONTRACEPTION By Gladys M Cox, M B- B S- Medical Officer to the Society for the provision of Birth Control Clinics Member of the Birth Control Investigation Committee, Medical Officer (Part time) for Maternity and Child Welfare Greenwich With an introduction by Lord Horder of Ashford K C V O , M D F R C P Second edition 1937 Pp 196 with 9 plates and 9 diagrams Published by William Heinemann (Medical Books) Ltd London Price 7s 6d net

Here in a comparatively small compass is set forth all that is known of the modern methods of birth control and it must be admitted that they are more numerous and varied than the average medical man imagines

It is not a pleasant book to read, and it was probably not intended to be so It is written entirely for the medical profession, and consists of established clinical facts, and does not deal in any way with the controversial aspects of the subject

It must be admitted that the majority of doctors know next to nothing about the matter and many think the whole question distasteful Some such knowledge as is contained in this book is however essential to the medical man if he is asked for guidance on a subject which has received such widespread publicity of late—a publicity one feels which is not always motivated by scientific interest

The naval medical officer is frequently consulted about the limitation of family With this book on his shelf he can give authoritative advice on every type of case

A Catechism of [illegible] for the Precau[illegible]
J P By No[illegible] Hamm[illegible]
Member [illegible] and Lectu[illegible]
Surgeon Sc[illegible] Ambulance [illegible]
Pp 12[illegible] [illegible]

This small book [illegible] in the form of [illegible] and answers [illegible] the [illegible] to be [illegible] the present or [illegible] [illegible] present understood [illegible]

The book gives [illegible] casualties including [illegible] agent in a gas as [illegible] affecting others

Special provisions have been [illegible] with other possible dangers to an [illegible] since protective measures depend [illegible] is said how its effects may be [illegible] respirators in common use are [illegible] should be worn

The book is easy to read and should [illegible] men

Murder in the Game Reserve By [illegible]
Surgeon Lieutenant R N (Ret[illegible]
illustrated London The [illegible]

This is the second work of fiction by [illegible] of reviewing

Practically the whole of the [illegible] Park, the huge Game Reserve in [illegible] and runs smoothly Perhaps there [illegible] by the Inspector but I doubt if any [illegible] gives the solution, although the cr[illegible] of the party who has the logical [illegible]

The type is easy to read and the [illegible] a story which holds and thrills

Organization Strategy and Tactic[illegible]
By T B Nicholls M B C M B [illegible]
1937 Pp xiv + 372 Bailli[illegible]
Covent Garden London W C[illegible]

In this book the author has collected [illegible] through official publications has combined [illegible] extensive practical experience and [illegible] material

A detailed description is given [illegible] the various medical units [illegible] the R A F [illegible] an ambulance trains and hospital ships

Chapters are also devoted to and [illegible] tog of returns the import of which [illegible]

The need for co operation with other [illegible] often an Medical Officer kept in ignorance [illegible] of a mistaken plea of secrecy

Attempts have been made to provide Medical O[illegible]

information, but never in a scale approaching the detail collected in this well produced volume

Much of the matter so conveniently presented is too 'technical' for the ship's doctor but for the Naval Medical Officer who finds himself detailed for large landing parties there are many things which can be learned from a perusal of this book

DROITWICH SPA Anonymous 1937 54 pages illustrated by photographs Messrs Charles W Hobson, Ltd St James's Street, S W 1

The Directors of Droitwich Spa have produced a well printed and attractive brochure setting forth in some detail the therapeutic resources of the hydrological establishments they control and the social and scenic amenities of the town where they are situated

The author has chosen to remain anonymous he writes with gusto and enthusiasm, even though he absents himself from literary felicity at times in order to tell his story We are in a position to say from some personal experience of the Spa that there are solid grounds for his recommendations His claims for the beneficial effects of the brine baths and ancillary treatments in cases of subacute and chronic arthritis are based on indisputable facts The spa has become of recent years an increasingly popular place of assembly for the arthritics of these islands and even of places that lie beyond the seas and the Directors of Droitwich have shown commendable zeal and energy in developing their therapeutic resources and in drawing attention to the many advantages of their town and district They have popularized home industries; they have drawn bodies from the clinging mud of Pistany and the chalybeate carrises of Kissingen waters to bathe their crippled limbs under English skies in the strong brine of Droitwich, famous for a thousand years

These waters contain it is stated the most powerful and most highly concentrated natural brine in the world The baths wherein the beneficial effects may be enjoyed are admirably equipped and although the seasons when an angel comes down into the pool and troubles the waters are like other such miraculous visitations few and far between, there is no doubt that very considerable improvement takes place in the condition of stiffened joints and periarticular tissues through the free movements they can enjoy in such a powerful supporting medium

It is further claimed that the efficiency of the heat regulating mechanism is increased the metabolism stimulated, and the elimination of poisonous products of cell activity promoted

The accessory apparatus for almost all forms of modern physical treatment is available on the premises Every facility is accorded to the medical profession for personal investigation of the cure

ELEMENTARY GENETICS FOR STUDENTS OF BIOLOGY AND MEDICINE By Hans Grunebeg, Ph D Berlin, M D Bonn Department of Zoology, University College, London Cathedral Series, pp 87 Edinburgh L and S Livingstone Price 3s 6d net

This small volume is the most recent addition to the well known "Catechism Series" which has helped to steer so many students through the narrows of examination to the harbour of success

It is primarily intended for students of biology and medicine and Professor Grunebeg has managed to compress an enormous amount of information within the short space of 87 pages

After a brief introduction to the subject of genetics and variation he gives a concise summary of the Mendelian laws followed by a detailed account of the action of genes the chromosome theory of inheritance and linkage

more
[illegible]
and
[illegible]
For those [illegible]
should be available [illegible]
to the ordinary [illegible]

# News of the Service.

## ADMIRALTY ORDERS

**1651 Hernia—Notation of Nature of Operation in Medical History Sheet**

(N D [illegible] 4 41 [illegible] —15 " 193 [illegible])

When an operation for hernia is performed a notation of the kind of operation [illegible] recorded [illegible] *the Medical History Sheet* and not a slip of paper attached thereto.

**1650 Medical Examination of Candidates for Acting Sub Lieutenant, R N and Warrant Officer**

(C W N 7661 " —2 1937 )

Candidates for the rank of Acting Sub Lieutenant and Warrant Officer are advised to [illegible] preliminary medical examination before commencing to work up for accurate [illegible] medical fitness for the rank.

3 The preliminary examination however will not take the place of the medical examination [illegible] official election.

3 Instructions Regulations and Admiralty Instructions will be communicated

**1644—Warrant Wardmaster—Professional Examination July 1937—Result**

(M D G /C W 7911/37 — 8 8 1937 )

The following results were obtained at the Royal Naval Hospital Haslar on July 1 1937

| Name | | O N | Marks | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Part I | | Part II | | | Part III | | | | |
| | | | Appointments | Duties | Anatomy | Physiology | Hygiene | Pathology | Nursing | Medicine | Surgery | Total |
| | | | 200 | 200 | 200 | 200 | 150 | 150 | 100 | 200 | 200 | |
| S B I O | Chandler C W | M 36713 | Ch | [illegible] | 15 | 14 | [illegible] | 84 | 1 | 50 | 1 | 18 | [illegible] | 1 |
| | Long F V | M 36761 | [illegible] | 130 | 5 | 1 | 37 | 91 | [illegible] | 10 | 2 | [illegible] | | |
| | Cook T C | M 36763 | [illegible] | 67 | 1 | 10 | [illegible] | [illegible] | 48 | 2 | 8 | [illegible] | 1 | |

**1703.—Standards of Form Vision for Sick Berth Staff Writers Supply Assistants Stewards and Cooks**

(M D [illegible] 4702 37 —12 7 37 )

The standards of [illegible] vision for the above mentioned ratings are as follows

*Entry Standard*

Distant

6/12 both eyes together Worse eye not less than 6/24 (without glasses)

Near

Snellen D = 0 6 (in each eye separately (with glasses if required)

[illegible]

1756 **Promotion Examination for Rank of Surgeon Commander: Result**
(M D C/W 1 1 —18 8 1937)

[illegible]

Surgeon Commander (promotion) C. A. Dowward M B R.A.N.
Surgeon Lieutenant Commander G. Rouse M B R.N.

[illegible]

**1757 —Sick Berth Ratings: Examination for Advancement**
(N 2851/37 2 9 1937)

1. [illegible] ving modifications to the regulations governing the examination of Sick Berth ratings for advancement take effect from October 1, 1937, inclusive.

2. Final examinations for advancement in the ratings of Sick Berth Chief Petty Officer, Sick Berth Petty Officer and Leading Sick Berth Attendant will be held by two Medical Officers and a Dhuma at all Malta and Hong Kong Hospitals as well as at Haslar, Plymouth and Chatham Hospitals.

3. Ratings passed provisionally at Malta or Hong Kong before October 1, 1937, are to be re-examined in Pharmacy if was not passed, but if the examining board included a Pharmacist the provisional examination will be regarded as final for ratings who have not subsequently failed at a final examination.

4. A final examination is to be taken at the first opportunity subsequent to passing provisionally and within three months of completing foreign service leave when applicable. Instead of within six months and completion of foreign service leave under present regulations.

5. Candidates failing at either a final or provisional examination are not to be re-examined until three months have elapsed. Those candidates who fail to be put back by the examining officer for three months or more according to the lack of knowledge in the prescribed subjects will be cancelled.

6. The date of passing qualifying will be postponed three months for each subsequent failure at the final examination. Thus increase of pay which is not granted to Sick Berth Attendants until they have passed P.T.I. will not be granted to Sick Berth Attendants and Leading Sick Berth Attendants that they have passed a final examination for next higher rating when increase of pay will date from the occasion on which they attained the date of passing provisionally for higher rating postponed by three months for each subsequent failure at the final examination and Sick Berth Attendants the date of passing P.T.I. whichever is the latest.

**1953 — Spadial Medical Stores**
*Aircraft Carrier*
(M D C 1926 1 —2 11 1937)

The list of Spadial medical stores allowed to ships all classes (page 33 Spadial Medicines &c for the Service Afloat) has been revised as follows:

| | |
|---|---|
| Red Cross Box | 1 No. |
| Spectacles | 1 pair |
| Mercury Manometer | 1 No. |
| mouthpiece for | 1 No. |
| nasalips for | 2 No. |
| Sphygmomanometer mercurial type | 1 No. |
| Bishop Harman Diaphragm Test | 1 No. |
| Eye Test Lenses in cases (Ophthalmoscopic Outfit) | 1 No. |
| Intrapupillary Millimetre Scale | 1 No. |
| Balancing Rod and Board | 1 No. |
| Binocular Gauge Test | 1 No. |
| Ishihara Colour Vision Charts | 1 book |
| Artificial Larynx | 1 type |

Attention is drawn to the fact that the above pictures (usually applied with the Bishop Harman Diaphragm Test).

2. The additional items are will be issued to *Courageous*, *Furious*, *Glorious* and *Eagle* without delay and On receipt of the Mercurial Sphygmomanometer the aneroid instrument apparatus should be turned in to the Naval Medical Depot, Deptford.

***1873. Short Service Medical Officers—Transfer to Permanent List**
(C.W. 4403 H. 16.9.1937.)

In reference to A.L. 2933 of 1936 as soon as possible after January 1, 1938, Short Service officers of the Medical Branch of the Royal Navy who were appointed to the Short Service List on or after March 13th, 1935, and who have completed four years' service in the rank of Lieutenant, will be given an opportunity of applying for transfer to the Permanent List. Applications will be considered in this respect from officers who have completed four years' service in the rank of Lieutenant, and those selected as suitable will be promoted to the rank of Lieutenant-Commander. Officers who do not wish to take this step on the date when they become eligible will be expected until they have completed a further period of service, the length of which will be announced when applications are invited.

**1877.—Engine Room Ordnance and Electrical Artificers and Shipwrights' Dental Standard**
(N. 3853/37.—11.9.1937.)

Candidates for direct entry as Artificers or Shipwrights should not be rejected for dental reasons provided they are fit and suitable in all other respects, can be rendered dentally fit for general service by dental treatment and are willing to receive such treatment promptly.

Fleetmen will be supplied on the public expense if required.

**1878.—Glasses for Artificers and Shipwrights' Supply of**
(N. 5953/37.—10.9.1937.)

When a Naval ophthalmic specialist advises that glasses are necessary to preserve eyesight an Engine Room Artificer or Shipwright Apprentice should be permitted to obtain glasses on dental specialists' lines to be supplied at the public expense provided that:

(a) The Apprentice's eyesight is up to or above the minimum standard current for entry, persons enlisted in his branch; and

(b) He is recommended by the Commanding Officer for retention in the Service.

Any person desirous of becoming an Artificer Apprentice should be informed that if he is unable to obtain spectacles at the public expense he will be required to pay for them himself.

**1879. Ordinary Seamen (Special Service)—Dental Standard**
(N. 6513/37.—11.9.1937.)

Until and unless in all other respects satisfactory entry as Ordinary Seamen (Special Service) who are left with normal dental standard may be employed pending the early wearing well fitting permanent dentures to remedy the early loss of natural teeth, dental treatment necessary to enable candidates to readily masticate food that have not fallen below the normal standard to be greater expense than the loss of pay imposing actual necessary waiting to obtain such treatment.—The Admiralty approve that:

(a) A written undertaking to be given by candidates entered under the conditions of (b) and (c) above expressing their willingness to obtain their own expense such treatment as dentures which may be necessary, and this undertaking to include a clause to the effect that in the event of their failing to observe it they shall also be explained to be discharged through Service channels to pay for the cost of the treatment themselves by instalments or by weekly instalment deducted from pay.

**2015.—Snellen Test Types**
(M.D.G. 47913/37.—10.9.1937.)

A new set of test types (Hook letters without serifs) is being issued to all medical boards. Two standards will be issued without demand to every ship having medical stores. New issues will be sent piecemeal as ordered.

2. Past examination sheets are to be destroyed. Service opposite numbers to be informed.

3. The old sheets and test types may be used until they are worn out, but when a set has to be replaced it must be the new pattern. Instructions for the use of the new test will be issued with the types.

## BIRTH

At Hong Kong on May 18, 1937, to Ina (née Wilkinson), wife of Surgeon Lieutenant-Commander A. N. Forsyth, R.N., Royal Navy, a daughter.

## MARRIAGES

Milligan—Shannon.—On July 23, 1937, at St. Lawrence's Church, Milford, Surgeon Lieutenant-Commander R. N. Milligan, R.N., to Majorie Seagler.

Price-Bland-Blood.—On September 4, 1937, at Christ Church, Wimbledon, Surgeon Lieutenant-Commander R. H. Price, R.N., married by the Rev. R. Roberts, M.A., Surgeon Lieutenant-Commander S. H. R. Bland, R.N., younger son of Mr. and Mrs. S. L. R. Price, and Dorothy Bridget, eldest daughter of the late Mr. H. Bindon Blood and Mrs. Bindon Blood.

## OBITUARY

## HONOUR

## DEGREES AND DIPLOMAS

## RETIREMENTS

## PROMOTIONS

## APPOINTMENTS

June

Surgeon [illegible] dat[illegible]
Paymaster [illegible] H V[illegible]
Ja. Mu[illegible]
Surgeon [illegible]
Surgeon [illegible]
Surgeon [illegible]
[illegible] M V[illegible]

## TRANSFERS TO PERMANENT LIST

Surgeon Lieutenants T A Page M B B Ch M H Adams M R [illegible]
[illegible] M B B Ch J J Shuter M B R Ch D T M C V Hu[illegible]
[illegible] C P L D S

## ENTRIES

[illegible] J Holroyd M B I S L R C P W R F McKeu M B [illegible]
[illegible] M B B Ch entered as Surgeon Lieutenants for Short Service [illegible]
[illegible] Haslar for course of instruction July 1 1[illegible]
[illegible] R Higgins M B C M B a d W Wilson M R C S L R C I [illegible]
[illegible] Lieutenants R N for Short Service and seconded while holding [illegible]
[illegible]
Mr R T Mc M R C S L R C I entered as Surgeon Lieutenant for Short Service [illegible]
[illegible] R N Hospital Haslar for course of instruction July 16 1[illegible]
[illegible] D S entered as Surgeon Lieutenant [illegible] for Short Service [illegible]
[illegible] Haslar for course of instruction August 1 [illegible]
Mr [illegible] Ex L D S and W C Smith L D S entered as Surgeon Lieutenants [illegible]
[illegible] appointed to R N Hospital Haslar for course of instruction [illegible]

## ROYAL NAVAL VOLUNTEER RESERVE

### APPOINTMENTS

June

[illegible] Staff Commander J M Tanna to R N Hospital Haslar J M Heggie [illegible] to R N Barracks Devonport
[illegible] Hospital [illegible] Master to R N Hospital Chatham
[illegible] Surgeons Lieutenants R M Tuffnell to *Furious* J L M Wood, M R C S [illegible] H B Howell M R C S L R C I to *Amethyst* W I D'Esterre M B [illegible]

July

[illegible] W Drummond to *Ramillies*
[illegible] Commanders J D Sluga to R N Barracks Devonport G F [illegible] M [illegible] Zetland R B Bethell M B Ch B to *Hawthorn* J A Kerr M B [illegible] R N Hospital Haslar (and for duty with N H O) J L Lax M R C P [illegible] R N Hospital Haslar
[illegible] Commanders (D) E B Mannens L D S to R N Barracks Portsmouth [illegible] R N Barracks Portsmouth
[illegible] Lieutenants W I Campbell M B Ch B F R C S L D S to R N Hospital [illegible] [illegible] M B B S to *Caledonia* S E Cook to R N Hospital Chatham [illegible] R B Dymond M R C S L R C P to *Cressy* R D Jenkins M B [illegible] Barracks Devonport C C Nicholas L R C P to R N Barracks Chatham [illegible] L R C P L R N Hospital Haslar
[illegible] Surgeon Lieutenant H C Lapthorne M R C S L R C P to *Ramillies*

August

[illegible] Commanders E J Henderson M B C M B to *Caledonia* J B [illegible] M B B S to R N Barracks Portsmouth
[illegible] Lieutenants M J Reddiglen M B C M B to *Repulse* P B Maroney M B [illegible] Hospital Haslar) W I Evenett M B C M B to *Cochrane* D R Maitland [illegible] to Haslar) J H Scottish Duchess
Fleet Honorary Surgeon Lieutenant R M Higgie M B C M B to *Cormorant* W S Wallan M [illegible] B S D P H to *Iron Duke*

[illegible]

MOTTO

[illegible]

[illegible]

## QUEEN ALEXANDRA'S ROYAL NAVAL NURSING SERVICE

### ENTRIES

Miss I. J. Mehay entered as Nursing Sister on probation and appointed to R.N. Hospital Plymouth July 21 1937.

Miss M. M. T. Dainty entered as Nursing Sister on probation and appointed to R.N. Hospital Chatham August 18 1937.

### APPOINTMENTS

Superintending Sister Miss E. Campbell to R.N. Hospital Malta Dec. 3rd 1936.

Sister in charge Sick Quarters Miss D. M. [illegible] to H.M.S. Hood on commissioning July 21 1937.

Nursing Sisters Miss N. M. Wall, July 1, R.N. Hospital, Haslar; Miss [illegible] June 21 1937.

Miss [illegible] R.N. Sick Quarters, Portsmouth, July 1, 1937; Miss I. N. Clapperton R.N. Hospital, Malta, July 1937.

### RESIGNATIONS

Nursing Sister Miss E. M. Hurst resigned July 1937.

Nursing Sister Miss S. M. [illegible] resigned Sept. [illegible] 1937.

### PROMOTIONS

Nursing Sister Miss T. K. Gilfrider to be Superintending Sister July 3rd 1937.

## Preparations, &c.

### "WELLCOME" BRAND SULPHONAMIDE P

[illegible] to the introduction of Tabloid Sulphonamide P (sulphanilamide) for the oral treatment [illegible] Messrs Burroughs, Wellcome and Co [illegible] the medicament, issued as "Wellcome" Brand Sulphonamide P in bottles of 100 gummies. The "Wellcome" Brand preparation is intended for both parenteral and oral administration.

Recent investigations have considerably broadened the therapeutic indications for Sulphonamide P. In addition to its established efficacy in combating streptococcal infections (puerperal septicæmia, erysipelas, scarlet fever with complicating otitis media) there is now justification for its trial in cases of meningococcal meningitis and *B coli*, *B aerogenes* and *B proteus* infections of the genito-urinary tract. Laboratory experiments also indicate that the drug may be of use in [illegible] pneumococcal lobar pneumonia, and in staphylococcal septicæmia or infections [illegible] experience for this group of infections is at present small.

### TABLOID FERROUS CHLORIDE CITRATED

Many authorities consider that Ferrous Chloride provides the most satisfactory [illegible] administering iron. Hitherto, however, the use of this salt in medicine has been restricted by its tendency to rapid oxidation and consequent reduction in therapeutic efficiency. Experiments with various stabilizing agents have resulted in the introduction of Citrated Ferrous Chloride now officially in the B.P. Addendum 1932. Messrs. Burroughs Wellcome and Co. issue the preparation as Tabloid Ferrous Chloride Citrated gr. 3 in bottles of 100. The product is sugar coated and is claimed to resist oxidation and deliquescence under all climatic conditions. It is advised to be taken after food with a copious draught of water.

## Notice.

### NAVAL MEDICAL COMPASSIONATE FUND

At the Quarterly Meeting of the Fund held on July 9, Surgeon Vice-Admiral [illegible] C.B., M.V.O., M.D., F.R.C.P., Medical Director General of the Navy in the Chair, [illegible] were considered and £70 voted to the applicants. The following is [illegible] of the cases relieved:—

Deputy Inspector General, who died in 1900. The [illegible] receives income but normally receives about £40 a year from [illegible] Suffers from sciatica and rheumatism and is unable to work. [illegible] Total amount received from the Naval Medical Compassionate [illegible] and is £790.

[illegible] Inspector General who died in 1904. Has no income [illegible] Age Pension of 10s. a week, and there is a long history of ill [illegible] and destitution. [illegible] Total amount received from the Naval Medical Compassionate [illegible] is £86.

370
284
370
292

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